



Politecnico
di Torino

Nexa Center
for Internet & Society

Annual Report 2023

Studying the Internet, exploring its potential & experimenting new ideas



Politecnico
di Torino

Nexa Center
for Internet & Society

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The Nexa Center for Internet & Society is a research center of the Department of Control and Computer Engineering at Politecnico di Torino (www.dauin.polito.it).

This report was made through a coral effort by the Nexa Staff, Directors and Community.



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FOREWORD

The last year, the Nexa Center celebrated 16 years since its founding. When it began its activities in 2006, there was a limited understanding of the implications of the digital revolution in Italy.

Despite the ever-increasing speed of technological progress, which also sadly manifests in the ongoing war in Ukraine, and the emergence of new technologies that seem to require innovative and multidisciplinary study methodologies, there is still a lack of serious interdisciplinary research in this field, at least in Italy.

The renewed military use of applied science, as well as new tools, like AI, and new methods of interpreting sociality, such as the Metaverse, inherently require a multidisciplinary approach. The concerns on the potential and concrete use of these technologies, that we already harbored last year, convinced us even more of the need to devote the specific multidisciplinary attention for which Nexa is known when addressing today's challenges. It is therefore in this sense that the work of Nexa has unfolded this year.

During the reporting period, the Nexa Center has undergone some significant changes that have broadened its horizons and solidified its collaborations with Turin's University (UNITO). With the arrival of Maurizio Borghi, the Nexa Center now has three directors leading the center's research endeavors. The Law Department of the University of Turin (UNITO) has actively increased its involvement in this year's research projects. We have officially recognized and solidified our collaboration with UNITO through the signing of a Collaboration Agreement in April. Marco Rondina joined the center as a Ph.D. student, bringing new perspectives, specifically in the field of responsible AI, for the Nexa Center's research activities.

Three important European projects, Strategyhack SIFIS-Home and CLIKC, in which the Nexa Center has been involved during the past years are nearing completion, and the Nexa Center is actively seeking new European projects where it can excel and secure funding, while being committed to continuing its interdisciplinary approach to research. Despite participating in numerous proposals, the success rates have been decreasing, leading to potential budget risks for Nexa. Additionally, European projects often only partially align with Nexa's scientific and cultural interests, limiting the ability to conduct research in areas deemed most important and compelling.

In a context of economic and social decline in Italy and Turin, the Nexa Center's focus on the social aspects of digital technologies has however been strengthened. The exploration of countervailing powers against the dominance of information giants, primarily oriented to maximising their profit, must now become a priority, as the public purpose and general interest remain central to the Center's critical independence.

This year, a new research center called Theseus has been launched at the Polytechnic of Turin. Theseus shares research interests that are connected and akin to those of Nexa. The two centers have already initiated their first collaborative initiatives, laying the foundation for a fruitful partnership in the future.

The Nexa Center has continued to focus on technology and society this year, with a particular emphasis on science fiction's role in shaping humanity in a world increasingly driven by digital technologies. The Nexa Annual Conference held on December 2, 2022, titled "Science Fiction From Around the World," was a success. The conference involved writers from Africa to America, from China to Italy, and attempted to imagine how digital technologies would shape art, identity, spirituality, affectivity, life, death, and humanity in the near future.

The renewal of the course "Politica e Tecnica" for this year is a testament to the Polytechnic's commitment to providing high-quality education and its recognition of the importance of the relationship between politics and technology in shaping the world we live in today. The course, held by Prof. Juan Carlos de Martin, is designed to provide students with a comprehensive understanding of the relationship between politics and technology, and its impact on society.

It is clear that technology will continue to have a significant and increasing impact on various aspects of our lives, from the way we work and learn to the way we commute and interact with the environment. As we continue to develop and advance technologically, it is crucial that we also consider the potential consequences and work to mitigate any negative impacts.

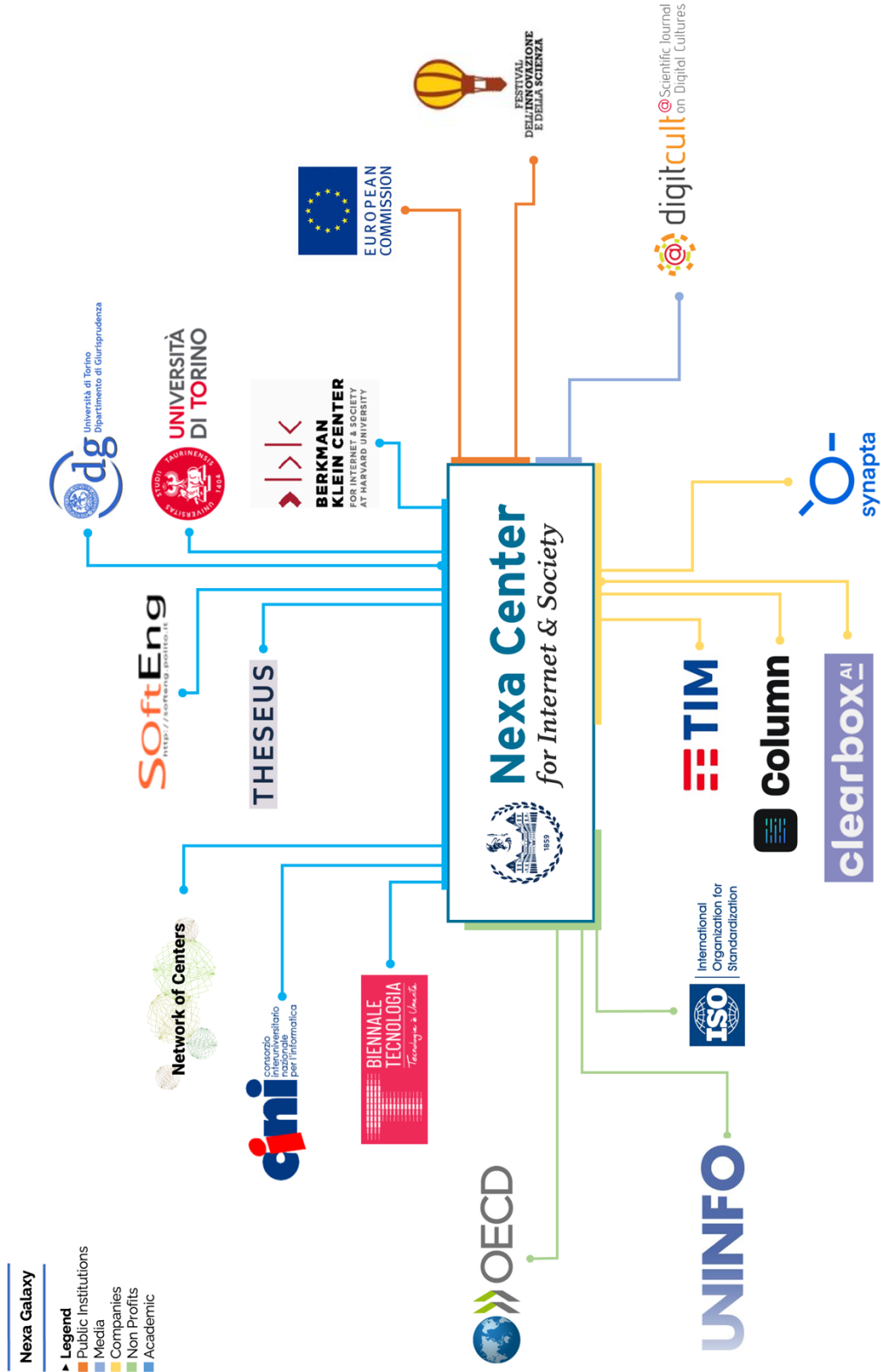
Furthermore, it is important to recognize and address global issues such as climate change, social justice, and political and geopolitical instability as all these issues, in one way or another, affect us all.

Overall, the importance of high quality ongoing education and awareness, as well as the need for collaboration and action to address the challenges we face as a global community cannot be stressed enough. The Nexa Center therefore continues to firmly believe in its interdisciplinary and collaborative approach to better face the challenges of the future.

Juan Carlos De Martin, Marco Ricolfi and Maurizio Borghi – Faculty Directors

NEXA 2022-2023 GALAXY

The main external entities with whom the Nexa Center interacted this year.



EXECUTIVE SUMMARY

INTRODUCTION

The activities of the Nexa Center over the period July 2022-May 2023 have continued to focus on the main themes of those of the previous year, and as such can be again summarized in these three working areas: **Artificial Intelligence and Society**, **Technology and Society**, and **Education**.

In this section, a **brief overview** of each area is presented, together with a small description of each project that Nexa has worked upon this year. A more detailed view of each activity is available in the following pages. As Nexa is not just a research center but also a community of scholars, this chapter takes a brief look at Nexa's organisation and community as well. Again, a detailed overview of the members of Nexa's community and of the overall organisation of the center is available in the later stages of this Annual Report.

ARTIFICIAL INTELLIGENCE AND SOCIETY

Data Bias: Identification of Mitigation and Remediation Strategies, Techniques and Tools. A study that aims at investigating the impact of poor data quality and biases in the data on the automatic decisions made by software applications.

Responsible AI: from principles to practice. A study that aims to develop practical techniques and industrial practices for accountable Artificial Intelligence (AI) decision-making.

FAIR: Future of Artificial Intelligence Research. An Italian national project that aims at addressing the research questions, methodologies, models, technologies, and even ethical and legal rules for building artificial intelligence systems of the future.

TECHNOLOGY AND SOCIETY

Biennale Tecnologia: a project that aims at strengthening the dialogue between the engineering sciences and humanities and social sciences to improve engineering education and research.

THESEUS: an interdisciplinary center at Politecnico di Torino whose mission is the integration of applied sciences, social sciences and humanities.

The Metaverse and its Opportunities: a thorough historical and conceptual analysis and critique of the Metaverse, taking into accounts its origins and its innovative potential, which is found lacking when compared to other digital experiences that had been made available throughout the years.

SIFIS-HOME: a secure-by-design and consistent software framework to improve the resilience of Interconnected Smart Home Systems at all stack levels.

Digital Platforms and Online Censorship: a project aiming to study online content moderation by gathering numerous case studies that reflect the legal issues concerning the balance between freedom of expression and policies against disinformation and hate speech on the internet.

EDUCATION

STRATEGYHACK: an Erasmus+ project that aims to create a series of courses for mid-level institution managers on the risks and opportunities of new technologies, and how to best implement them.

STRATEGYHACK follows in the footsteps of the previous EDUHACK project.

CLICK: an Erasmus+ project which intends to experiment with an innovative way to effectively train unemployed people, in an attempt to shorten the duration of the unemployment period and allow the active labour market system to focus on weaker categories. The project aims to create and test an educational catalogue and a new distance learning tool of its own kind.

Geranium: a research project aiming at developing a platform to reduce the barriers for accessing scientific publications by citizens and create new collaboration opportunities between researchers.

FUNDING

Value-Verse: This project proposal is currently under evaluation. It aims to create an open and decentralized Metaverse based on European values and principles. The project is designed to foster stakeholder engagement through a circular translation model. If the project is approved, it could have significant implications for the development of an ecosystem conducive to a flourishing European Metaverse industry.

DigPol: This project is under evaluation. It aims to examine the social and political impacts of digitalization from the perspective of conceptual history and feminist theory. If approved, it could

contribute significantly to the development of a more nuanced understanding of the social and political impacts of digitalization.

SOLID: This project proposal has been rejected. It aimed to develop Solidarity-Centered AI that advances collective and institutional capacities for enacting European values of cohesion, democracy and solidarity. The project proposed to investigate inherent biases and develop knowledge, policies, and models for improving the quality and social sustainability of AI in the public sector.

META-DT: This project proposal has been rejected. The project aimed to improve container terminal performance by implementing a meta-Digital Twin (MDT) of the Rubber Gantry Crane (RTG).

Educounter: This project proposal has been rejected. The project aimed to use AI algorithms to identify and relate media narratives in clashes between religious cultures to stimulate depolarization.

SMART: This project proposal has been rejected. The project aimed to create a Place for Experimentation, Prototyping, and Implementation of Technologies related to the Development of New Generation Connection and Communication Networks

OPENNESS: this project aims to focus on protecting public spaces while respecting privacy and avoiding mass surveillance. The main research question of OPENNESS is how to enhance understanding and transparency to assist law enforcement agencies, municipalities, and private surveillance operators in developing more inclusive, effective, and responsible surveillance capabilities.

RAISE: This project proposal has been rejected. The project aimed to prevent, manage, and alleviate risks that are related to the adoption of AI by insurance innovators. It proposed to integrate disciplinary perspectives and develop a multidisciplinary and multidimensional project to analyze risks and define and test solutions.

ORGANIZATION AND COMMUNITY

This year, first and foremost we would like to welcome Maurizio Borghi as new Co-Director of the Center. He was officially nominated in September 2022. Maurizio is a full professor of Commercial and Corporate Law at the University of Turin, and a long-time participant of the Nexa Center's life as a trustee. During the reporting period, two new members have joined the Nexa Staff. Nexa welcomed a new Ph.D student, **Marco Rondina**, with a research project on Responsible AI. Marco holds a Master's Degree in Computer Engineering from the Polytechnic of Turin. **Beatrice Balzola**, graduated in Law, has completed an internship this year working on the Center's European Projects, mainly Strategyhack, and assisted Nexa in its external dissemination.

OUTREACH

As to Nexa's outreach work, the 14th annual conference of the Center was organized on the 2nd of December 2022, with the title **Science Fiction from Around the Globe** (<https://nexa.polito.it/conf2022>). The conference was devoted to science fiction literature, involving writers from all around the world. The Nexa Center participated in the 2022 edition of Biennale Tecnologia, which took place in Turin from the 10th to the 13th of November. The theme of the event was: "Principles - Building for Generations". <https://nexa.polito.it/biennale-tecnologia-22> The Nexa Center also participated in the 8th edition of Biennale Democrazia, which took place in Turin from the 22nd to the 26th of March. The theme of the event was: is "On the edge of freedom", with the aim of returning to the fundamental issues affecting our democratic systems, starting with freedom, which, together with equality, constitutes the very foundation of democracy. <https://nexa.polito.it/biennale-democrazia-2023>

LOOKING AHEAD

Currently, the Center's goal is to enhance its project participation in both private and public sectors. By doing so, the Center aims to secure adequate funding to sustain its ongoing activities and potentially facilitate future expansion. Increasing the number of projects in which the Center participates is in fact crucial for its financial stability and growth.

Another objective, partially achieved this year with the arrival of Marco Rondina in the Nexa community, is to find new valuable students that may participate in PhD studies.

The Nexa Center continues its mission to foster strong participant connections, building a vibrant community that thrives on collaboration and knowledge sharing. By cultivating a supportive environment, the Center aims to enhance the collective expertise and resources of its participants, facilitating innovation and growth. Simultaneously, the Center continuously engages in introspection and discussions about its future, evaluating emerging trends and technologies to adapt and evolve.

Artificial Intelligence and Society

1.1 Data Bias: Identification of Mitigation and Remediation Strategies, Techniques and Tools

A study that aims at investigating the impact of poor data quality and biases in the data on the automatic decisions made by software applications.

Project Website	https://nexa.polito.it/data-bias
Status	Concluded
Period	November 2019 – January 2023
Funding	In-kind
Funding organization	Politecnico di Torino, Softeng research group, Nexa Center for Internet & Society
Persons in charge	Antonio Vetrò (Senior Researcher), Marco Torchiano (Nexa Fellow), Mariachiara Mecati (Ph.D. Student)

Background

Many software systems make use of a large amount of data (often, personal) to make recommendations or decisions that affect our daily lives. Consequently, computer-generated recommendations or decisions might be affected by poor quality and bias in the input data. This implies relevant ethical considerations on the impact (in terms of relevance and scale) on the life of persons affected by the output of software systems.

Objectives

The PhD proposal aims at investigating the impact of poor data quality and biases in the data on the automatic decisions made by software applications. As a minor aspect, the ethical character of algorithms and the relative effects on decisions will be also investigated. The objectives of the PhD plan are the following:

- (i) Build a conceptual and operational data measurement framework for identifying data input characteristics that potentially affect the risks of wrong or discriminating software decisions.
- (ii) Collect empirical evidence concerning the actual impact of the measured data quality issues on automated decisions made by software systems.
- (iii) Design of mitigation and remediation strategies and specific techniques to reduce the

problem.

In addition, as a secondary goal:

- (i) Investigate how quality of software and bias incorporated in the algorithms can contribute to flawed decisions made by software applications.
- (ii) If any evidence is found, investigate how this aspect is related to the previous one of data quality and bias.
- (iii) Design and prototyping of remediation techniques for the problem.

Results

Several experiments have been conducted to investigate how the balance of protected attributes in training data can be used to assess the risk of algorithmic unfairness. We identified four balance measures and tested their ability to identify the risk of discriminatory classification by applying them to the training set. The results of the experiments showed that the indexes properly detect unfairness of software output. However, we found the choice of the balance measure has a relevant impact on the threshold to consider as risky; further work is necessary to deepen knowledge on this aspect with a set of imbalance measures with a view to examining in more depth the capability of such measures to detect imbalance among the classes of a given attribute in a dataset.

During the reporting period, the following articles were published:

Mecati, M.; Torchiano, M.; Vetro, A.; De Martin, J.C. , *Measuring Imbalance on Intersectional Protected Attributes and on Target Variable to Forecast Unfair Classifications*, IEEE ACCESS, 11:(2023), pp. 26996-27011

Mecati M., Adrignola A., Vetrò A., Torchiano M., *Identifying Imbalance Thresholds in Input Data to Achieve Desired Levels of Algorithmic Fairness*, Second International Workshop on Data Science for equality, inclusion and well-being challenges (DS4EIW 2022), Osaka, Japan 17-20 Dec. 2022, Page 4700-4709. For a comprehensive list of all the 3-years project-related publications , please check the web page:

<https://nexa.polito.it/data-bias>

1.2 Responsible AI: from principles to practice

A study that aims to develop practical techniques and industrial practices for accountable Artificial Intelligence (AI) decision-making.

Project Website	https://nexa.polito.it/responsible-AI-from-principles-to-practice
Status	ongoing
Period	November 2022 – November 2025
Funding	79.900
Funding organization	Politecnico di Torino, Nexa Center for Internet & Society
Persons in charge	Marco Rondina (PhD Student), Juan Carlos De Martin (PhD supervisor), Antonio Vetrò (PhD tutor)

Background

Artificial Intelligence (AI) applications automate decisions on relevant aspects of human lives. These kinds of automated decisions often unfairly discriminate against groups of individuals, on grounds that are unreasonable or inappropriate. The goal of the research is to translate the principles and guidelines of responsible and human-centric AI into techniques and actionable industrial practices.

Objectives

The PhD proposal aims to research, implement, and test techniques that can help detect bias and data quality issues in training data and mitigate them by experimenting with a variety of techniques. The objectives of the PhD plan are the following:

- (i) Identify data quality and bias measures and test them on available datasets, their mutations, and synthetic datasets; experiment with the propagation of bias and quality problems to the output of classification/prediction tasks; identify and test mitigation techniques.
- (ii) Identify guidelines and measures for the quality of dataset documentation; set up and perform measurements on available datasets; analyze results and possible consequences as "data cascades".
- (iii) Design and prototype informative, ethically sensitive

data labels that can inform stakeholders (data maintainers, model builders, end users, etc.) about the risk of downstream effects from early data problems in AI pipelines. The data labels will be designed and tested with the aim of facilitating early intervention and mitigation of data cascades, including both human intervention (through interactive visualizations) and seamless implementation in the AI pipeline.

Results

An empirical investigation was conducted to investigate the state of dataset documentation practices by measuring the completeness of the documentation of several popular datasets in the ML/AI community. We analyzed the documentation presented in the very same place where the data can be accessed, to capture the peculiarities of the communities around some popular dataset repositories. A set of information that should always be clear to the users of the datasets, to achieve transparency and accountability, was adapted into a Documentation Test Sheet, which is able to measure the completeness of the documentation. It turned out that the information related to how to use the dataset was the most present. On the contrary, maintenance overtime or processes behind the data generation were very poorly documented. In general, a lack of relevant information was observed, highlighting a lack of transparency. The analysis of the

data shows the potential of repositories to help curators of datasets to produce better documentation, especially if they provide a more comprehensive documentation schema.

At the time of writing, the project is still in its early stages and has not yet produced any relevant publications.

1.3 FAIR: Future Artificial Intelligence Research

An Italian national project that aims at addressing the research questions, methodologies, models, technologies, and even ethical and legal rules for building artificial intelligence systems of the future.

Project Website	https://nexa.polito.it/fair
Status	ongoing
Period	January 2023 – December 2025
Funding	5.4 M.€, of which 122 K€ for Politecnico di Torino. Funding for the Nexa Center to be defined
Funding organization	Italian Ministry of University and Research
Persons in charge	Antonio Vetrò

Background

The "Future Artificial Intelligence Research (FAIR)" project aims to help address the research questions, methodologies, models, technologies and even ethical and legal rules for building Artificial Intelligence systems capable of interacting and collaborating with humans, perceiving and acting within changing contexts, being aware of their limitations and capable of adapting to new situations, being aware of the perimeters of safety and trust, and being mindful of the environmental and social impact their implementation and execution may entail.

The project was submitted by the National Research Council as the proposing party, in collaboration with the AIIS (Artificial Intelligence and Intelligent Systems) National Laboratory of CINI (National Inter-university Consortium for Informatics) under the The National Recovery and Resilience Plan funded by the European Union - NextGenerationEU, Action 1.3, "Creation of "Partnerships extended to universities, research centers, and companies for the funding of basic research projects," by the output of software systems.

Objectives

The research activities are carried out within 10 spokes that will involve more than 350 researchers (<https://future-ai-research.it/spoke/>).

Each spoke is characterized by a specific thematic area and its own

set of research challenges with the aim of addressing FAIR challenges from different vantage points. The spokes are: Human-centred AI, Integrative AI, Resilient AI, Adaptive AI, High-quality AI, Symbiotic AI, Edge-exascale AI, Pervasive AI, Green-aware AI, Sustainable Bio-socio-cognitive AI.

Spokes act as catalysts for both the development of innovative AI technologies and new AI services in strategic sectors for Italy, involving the industrial sector, both at the level of large companies and innovative small and medium-sized enterprises. The Spokes interacts with 7 "transversal projects" (<https://future-ai-research.it/progetti/>).

The Nexa Center is involved in the activities of the Spoke 7 Edge-exascale AI. The goal of this work package is to investigate all implications of AI on edge and exascale devices from an ethical, economical, societal and environmental point of view, including: trustworthiness, accountability and responsibility, discrimination risk identification, explainability, transparency, energy implications, also based on spatial and thematic data, both real and synthetic. The Nexa Center is responsible of the task "Ethically-sensitive dataset labeling": the goal of the task is to research, design and prototype data labels that can inform stakeholders (data curators, model builders, end users, etc.) about the risk of downstream ethical and societal issues

derived from specific datasets' characteristics. The following aspects will be investigated: low trustworthiness due to poor data quality, lack of accountability due to poor data documentation, risk of systematic discrimination of specific social groups (e.g. gender, age, education level) caused by low balance in the distribution of protected attributes. By synthetically documenting selected datasets characteristics, the dataset measurements and labeling scheme will support the creation, selection and adoption of datasets in a more responsible way, providing better transparency, facilitating early interventions, mitigating possible data cascades, and ultimately enabling human-respectful AI innovations



Results

At the time of writing this report, the project is in its initial phases, and it did not produce any relevant public result yet.

Technology and Society

2.1 Biennale Tecnologia

A big cultural event with a series of wide-ranging national and international appointments aimed at proposing a broad reflection on the relationship between technology and society and at strengthening the dialogue between universities and civil society.

Project Website	https://2020.biennaletecnologia.it
Status	Concluded
Period	November 10th-13th, 2022
Funding	in-kind
Funding organization	Politecnico di Torino
Persons in charge	Juan Carlos De Martin (coordinator), Mattia Plazio (organization assistant)

Background

After the success of Festival della Tecnologia (<https://2019.festivaltecnologia.it/>) and the first edition of Biennale Tecnologia (November, 12th-15th 2020, <https://2020.biennaletecnologia.it/>), Politecnico di Torino, under the coordination of Professor Juan Carlos De Martin, will host the second edition of Biennale Tecnologia (November, 10th-13th 2022, https://poliflash.polito.it/in_at_eneo/presentata_l_edizione_2022_di_biennale_tecnologia). Biennale Tecnologia, as well as the Festival, is a series of wide-ranging national and international appointments aimed at proposing a broad reflection on the relationship between technology and society and at strengthening the dialogue between universities and civil society. In times of social, cultural and technological turbulence, Biennale Tecnologia presents itself as one of the first events specifically devoted to a dialectic reflection on technology, its role on society and on the related future challenges.

Objectives

Biennale Tecnologia is aimed to describe the key role that technology has taken on in all spheres of human life, from health to the environment, from personal relationships to the

economy and democracy itself. To do this, Biennale Tecnologia decided to embrace an interdisciplinary approach and to adopt multiple languages, that of science, of course, but also of the humanities, art, literature, cinema, music and sport. Politecnico di Torino promoted the first edition of Biennale Tecnologia not only as its own direct expression but also as the expression of a vast and widespread network of partners (<https://2020.biennaletecnologia.it/partner>), including national and international research institutes, as well as public institutions, private companies, experts and high-level guests. Each of these contributions enriched a vast program with initiatives that, due to the Covid-19 pandemic, took place entirely online, experimenting new ways to involve a very transversal audience in a common reflection of nowadays most relevant challenges that we must face as human beings. In a very difficult time for human history, the first edition of Biennale Tecnologia wanted to be a contribution by Politecnico di Torino to the City of Torino, to Piedmont and to Italy: a key element of its civic role and its strategy of production and sharing of

knowledge for the whole community.

Program

The first edition of Biennale Tecnologia proposed a series of online events (<https://2020.biennaletecnologia.it/programma/biennale>) mainly devoted to the topic "Mutations – for a sustainable future". Its program officially opened on November 12 with a double lecture held by two important guests who have always been attentive to innovation and new technologies: Francesca Bria, President of the National Innovation Fund, and Bruce Sterling, writer and main representative of cyberpunk literature. Over the next three days, over 180 online lectures, panels, concerts, reading, exhibitions and other activities were scheduled, with more than 300 speakers from all over the world, including scientists, writers, sociologists, economists, philosophers and many others, who carried on the reflection on technology's impact on our society from different perspectives and with different languages. The Nexa Center, one of the key partners of Festival della Tecnologia, contributed to the first edition of [BiennaleTecnologia](https://2020.biennaletecnologia.it/) collaborating by organizing several meetings that involved its large community of scholars and researchers.



The second edition of Biennale Tecnologia, proposed a series of online events (<https://2022.biennaletecnologia.it/>) mainly devoted to the topic "Principles - Building for Generations". Its program officially opened on November 10 with the Lectio Magistralis by Nassim Nicholas Taleb, which was also attended by Politecnico Rector Guido Saracco, festival curator Luca De Biase and La Stampa daily editor Massimo Giannini. The Nexa Center, one of the key partners of Festival della Tecnologia, contributed to the second edition of Biennale Tecnologia, collaborating by organizing several meetings that involved its large community of scholars and researchers.

Results

The first edition of Biennale

Tecnologia was a great success with over 20,000 attendees in 4 days, 180 online meetings and activities, 6 exhibitions, 8 online shows, more than 60 collaborations activated, 116 laboratories (online and offline) for the primary and secondary school, and a significant presence on national press. The second edition of Biennale Tecnologia will take place from the 10th to the 13th of November 2022. In 2021, Biennale Tecnologia collaborated to the realization of the 7th edition of Biennale Democrazia (<http://biennaledemocrazia.it>), the "friendly" event with which it shares the same interest for the promotion of a real democratic culture, also as a result of a more awareness way of thinking to technology.

The 2022 edition of Biennale Tecnologia, which took place in Turin from the 10th to the 13rd of November, devoted ample space to the theme "Internet

and Society", proposing a series of meetings. with the participation of the co-directors and some trustees and fellows of the Nexa Center for Internet and Society of the Politecnico di Torino. The theme of this edition of the Biennale Democrazia is "Principles - Building for Generations". The event has been implemented in a tried and tested formula that has seen more than 100 appointments alternating between lectures, dialogues, meetings, debates, exhibitions and performances, all distributed in the main venues of the Politecnico in Corso Duca degli Abruzzi and the Valentino Castle, but also in the spaces of the Circolo dei lettori - a partner since the first edition of the event - and the Officine Grandi Riparazioni, which have become a prestigious venue this year thanks to the partnership with OGR Torino and the support of the Fondazione CRT.

2.2 THESEUS

THESEUS - Center for the Study of Technology, Society and Humanity: an interdisciplinary center at Politecnico di Torino whose mission is the integration of applied sciences, social sciences and humanities.

Project Website	https://www.polito.it/theseus
Status	ongoing
Period	2022-present
Funding	in-kind
Funding organization	Politecnico di Torino
Persons in charge	Juan Carlos De Martin, Antonio Vetrò

Background

The Strategic Plan of Politecnico di Torino recognizes the importance of the human and social sciences, along with interdisciplinarity: they are educational values and skills that benefit the University's educational, research and technology transfer activities.

Therefore, in spring 2022, THESEUS - Center for the Study

of Technology, Society and Humanities - was established: an interdisciplinary center of the Politecnico di Torino whose mission is the integration of applied sciences, social sciences, and humanities. The birth of Theseus is the direct results of the past activities of the SUSST working group (Humanities and Social Sciences for Science and Technology), founded in 2018

and then guided by Prof. Juan Carlos De Martin.

Objectives

In its start-up phase, THESEUS has three main goals:

1. To contribute to the cultural and more generally third mission activities of the Politecnico by organizing seminars and analysis workshops on the issues of technology and its social,

economic, political and environmental impact.

2. To contribute to the University's educational offerings at all levels integrating the perspectives of the applied sciences, particularly engineering, and the humanities and social sciences with reference to technology, its preconditions and its impact.

3. To foster integration in research by exploring issues of great collective relevance from an interdisciplinary perspective between applied sciences, humanities and social sciences, participating in national and international research projects, and particularly promoting policy-oriented research.

THESEUS' work along the three objectives is geared toward providing analyses and

solutions relevant to public policy and policymaking, including through the publication of policy briefs and position papers and by promoting and organizing training activities aimed at public and private decision makers.

Results

Among the first results of THESEUS is the Master's in Technology and Public Policy, organized with the Polytechnic's School of Masters and the International Training Centre of the International Labor Organization ITCILO.

THESEUS also organized the "Theseus Colloquia" (<https://www.polito.it/impatto-sociale/centro-studi->

[theseus/theseus-colloquia](https://www.polito.it/impatto-sociale/centro-studi-theseus/theseus-colloquia)), which are a series of seminars on the topics of technology, its preconditions and its social, economic, political and environmental impact. The Theseus Colloquia are given by international experts working on issues fundamental to contemporary societies in an era of technological transformation.

THESEUS is also representing the Politecnico in the revitalization of Scienza Nuova, the center jointly established by the Politecnico di Torino and the University of Turin to integrate the activities of the two Turin universities on issues of social transformation in an era of technological change.

2.3 Metaverse and its opportunities

An analysis of the current status of the "metaverses", digital experiments often considered cutting-edge which in reality derive from old concepts from virtual worlds and MMORPGs

Project Website	https://nexa.polito.it/metaverse-and-its-opportunities
Status	Concluded
Period	September 2022 - December 2022
Funding	30.000€ (VAT excluded)
Funding organization	TIM
Persons in charge	Antonio Vetrò (Senior Researcher), Giacomo Conti (Researcher)

Background

The term "metaverse" is a portmanteau of "meta" and "universe," and refers to the evolution of the internet in a science-fiction-like virtual world that allows for constant interactions between users, represented by their *avatars*. The meaning of the term has evolved since it was first introduced in Neal Stephenson's novel *Snow Crash* in 1992, and it has now become a buzzword used by many large digital companies, such as Meta, Microsoft, Ubisoft and others. However, the proliferation of "metaverses" with different rules and programming has made the term's meaning

unclear and contradictory, as it should refer to a precise and unique virtual world connecting every possible iteration of the internet.

Such experiments already seem to be largely on the verge of sunset, because of their poor implementation and for being badly received by the internet community. But the concepts underlying metaverses, as rooted as they are in the world of I.T., will certainly not disappear in the short term. On the contrary, the success of their formula, if well made, is undeniable. Knowing their history, implications and opportunities arising from them is therefore very useful for an

informed strategy in the digital world.

Objectives

The objective of this project is to provide an in-depth analysis of the concept of the *metaverse*, its origins, traced back to the first role-playing tabletop games in the '80s, and the potential future of virtual worlds in general, of which the metaverses are just one kind.

Results

A deliverable has been produced: *Il Metaverso e le sue Opportunità* ("The Metaverse and its opportunities"), which shines light on what the metaverse, or rather,

the metaverses, truly are, and from what concepts they derived. The document takes into account the main metaverses available on the market and heavily criticises

the practical realization of that projects, offering examples of more successful alternatives and analysing why this is the case.

A workshop has also been organised together with TIM to discuss the results of the document and provide a Q&A session on the 19th of April.

2.4 SIFIS-HOME

A secure-by-design and consistent software framework to improve the resilience of Interconnected Smart Home Systems at all stack levels.

Project Website	N/A
Status	ongoing
Period	October 2020 – September 2023
Funding	437.750 € (30.000 € for Nexa)
Funding organization	EU Horizon 2020 Programme
Persons in charge	Juan Carlos De Martin (P.I.), Giacomo Conti (Project Manager)

Background

Smart Home devices are increasingly widespread in today's society. However, this emerging market still has noticeable barriers and concerns, mainly related to cyber security and safety, as well as privacy and integrity of produced and consumed data.

As of today, most of the state-of-the-art Smart Home devices typically use custom and proprietary security solutions, which do not take into account interactions with other devices in the Smart Home system. Moreover, developers have to strive in developing applications adaptable to different systems and architectures, where security aspects are often neglected or not properly addressed. This results in security vulnerabilities, a lack of privacy-oriented management of data and issues in setting up multi-vendor systems.

Objectives

SIFIS-Home aims to address these concerns by providing a full-stack, flexible software framework targeting application developers, Smart Home administrators and end-users. Needs to address these aspects for IoT environments and their interaction with the human users have also been identified by the four pilot projects of the European Cyber Competence Network, whose common vision is aligned with the principles followed by SIFIS-Home.

Regarding Nexa Center's primary contribution to the project, privacy problems and ways to address them have been analysed and proposed, and advice is being provided throughout the architecture's development.

Results

Nexa has been providing legal advice on privacy and security matters and will be providing it throughout the duration of the project. Together with Lawyer Marco Ciurcina we provided:

1. A detailed documentation of the current privacy legislative framework in the EU, and of how to obtain complete privacy compliance with the GDPR requirements.

2. A privacy analysis of the SIFIS-Home architecture in general
3. A thorough series of suggestions for implementing a "traffic light system" through which SIFIS-Home privacy dashboard could rate the privacy-friendliness of application usage.
4. Privacy Policies and risk assessment for the applications involved in SIFIS-Home's pilot.

2.5 Progetto Censura Online

A secure-by-design and consistent software framework to improve the resilience of Interconnected Smart Home Systems at all stack levels.

Project Website	https://nexa.polito.it/digital-platforms-online-censorship
Status	ongoing
Period	October 2022 - Ongoing
Funding	In-kind
Funding organization	N/A
Persons in charge	Maurizio Borghi (Coordinator), Beatrice Balzola (Researcher)

Background

The state of the art of the regulation of online content moderation is continuously evolving. In recent years, the European Union has brought on numerous actions aimed at creating a uniform and complete regulatory framework which can balance both the right to freedom of expression and the contrast to illegal activity.

The lack of a general obligation to monitor, at first enshrined in Directive 31/2000 and then reaffirmed by the Digital Services Act Package (DSA), creates an interesting liability regime for online service providers. Such providers are excluded from liability regarding content hosted on their platforms unless, once aware of the presence of illegal content, they don't act expeditiously to remove it. As stated in the DSA, the concept of 'illegal content' should broadly reflect the existing rules in the offline environment, therefore

including illegal hate speech but leaving out disinformation, to be considered as harmful although not illegal. Soft law deeds such as the Code of Conduct in Countering Illegal Hate Speech Online, adopted in 2016, or the Code of Practice on Discrimination (2018), although non-binding agreements, have had an impact in the creation of monitoring standards for disinformation and hate speech, leading towards the creation of a culture of self-regulation.

On the one hand, this legal landscape shapes the will of the European Union to regulate digital platforms. On the other hand, however, it raises concerns on the instruments used to do so. While it is true that online service providers have a duty to transparency of content moderation, it is also true that users don't have the tools to keep in check the provider's activity, especially in a broader context of constitutionally protected rights such as freedom of expression

and freedom of information. From this assumption stems the will of the researches of this project, to collect a number of case studies in order to study and find patterns on the way in which platforms interact with users, moderate content or potentially target specific topics.

Objectives

The research will focus on Italy and will take into consideration the main hosting platforms. An online questionnaire on "digital censorship" will be distributed to the public.

Join the project by filling out the questionnaire [HERE](#) to identify representative case studies of legal conflicts.

Results

The results of the research will be consolidated in a scientific paper and will be presented in public workshops and seminars.

Education

3.1 STRATEGYHACK – Hacking Institutional Strategy for Rapidly Deployed Digital Education

A project that improves digital skills of teachers in Higher Education and works on a new approach for their's capacity building in the digital world

Project Website	https://nexa.polito.it/StrategyHack
Status	ongoing
Period	March 2021 - July 2023
Funding	292.450 € (54.880 € for Nexa)
Funding organization	European Commission (Erasmus+ Cooperation for Innovation and the Exchange of Good Practices / KA203 - Strategic Partnership)
Persons in charge	Juan Carlos De Martin (Coordinator), Giacomo Conti (Project Manager), Anita Botta (Senior Researcher), Selina Fenoglio (Administrative Manager), Stefano Boldi (Intern)

Background

It's been two years since COVID-19 led to the closure of education and training buildings, campuses and other sites and a forced shift to emergency modes of digital education. In many Member States, most institutional leaders, in particular those in mid-level positions, had little if any experience in organising online teaching and learning and in the different infrastructural, human resource and administrative challenges associated with it. The gulf between the responses of different institutions to the crisis has shown that leadership is one of the most important enabling factors for a successful digital transition. Moreover, it has become clearer that these leaders, along with their institutions at large, need to be knowledgeable on the opportunities and risks of this new digital-centered era.

Institutions that had previously invested in building the digital capacity of their management were better prepared to adapt teaching approaches, keep learners engaged, and continue the education and training process. Strategyhack aims to build skills for mid-level institutional leaders to accelerate the digital transformation of their areas of competence.

Objectives

StrategyHack supports the priorities of the Digital Education Plan, and focuses on capacity building of mid-level institutional leaders since a resilient transformation requires strengthening the connecting tissue between the high-level management strategy level and the digital-pedagogy level which these personnel provide. It intends to:

- Accelerate digital transformation of staff, programs and institutional processes within Higher Education;
- Promote and nourish high quality self-directed personalised learning environments.
- Lock in the gains made to the perception of digital learning during the COVID crisis and using these to promote more sustainable models of digital education.



Results

The following results are expected upon completion of the project:

- A *Capacity Building Course on Digital Education Strategies for Institutional Leaders*. A total of 25 courses have been created, all based on the effects, risks and opportunities that digital technologies, as well as the digital transformation itself offer to Higher Education Institutions. These courses will be provided to the participants of the various hackatons that every partner will organize.
- An Online Hackathon event has been organised throughout two days, on the topics of privacy and new technologies and opportunities available in educational institutions.
- An Online Webinar on privacy, GDPR compliance and tools to favour this compliance has been organised in late march.
- A strategy-guidance document, *Model Management System for digital education*, will give institutional leaders a map to build their institutional strategies meant to integrate digital learning into the institution's identity and brand, to provide strategic

approaches to manage risks and sustainability, methodologies to manage

resources efficiently and to provide tools and techniques to tackle the

most challenging operational activities in digital education.

3.2 CLIKC

An Erasmus+ project which intends to experiment with an innovative way to effectively train unemployed people.

Project Website	https://nexa.polito.it/clikc
Status	ongoing
Period	June 2021 – July 2023
Funding	in-kind, 48.224 € for Nexa
Funding organization	European Commission (Erasmus+)
Persons in charge	Giovanni Garifo (Project Manager and Software Engineer), Antonio Casto (Machine Learning Developer)

CLIKC is an Erasmus+ project which intends to experiment with an innovative way to effectively train unemployed people, in an attempt to shorten the duration of the unemployment period and allow the active labour market system to focus on weaker categories. The project aims to create and test an educational catalogue and a new distance learning tool of its own kind, focusing on the following innovations:

- innovations regarding the teaching methodology (Content Language Integrated Learning and Micro-Learning)
- innovations concerning the ICT intermediation tool (Adaptive Learning and Advanced Analytics)

Moreover, the training catalogue will focus on 4 specific skills in the area of basic personal and relational skills.

Background

Unemployment is one of the more relevant issues in the European Union. In 2019 7,5% of the work force in the EU-19 area was unemployed (6,7% in EU-27 area) and 44% had been unemployed for more than 12 months. The 2012 EFSI

(European Fund for Strategic Investments) study asserts that the annual cost of each unemployed person is roughly 25.000 euros and, although only 25,2% of unemployed people receive economic public subsidies, the total annual cost of unemployment is around 90 billion euros per year. In particular, it is the length of individual unemployment periods which constitutes a threat for the social and economic sustainability of the system. It is crucial to rapidly support unemployed people with placement and career services. Training is a powerful driver of employability support. Skills are the main asset capable of qualifying the job offer and their enhancement is essential to support entry and permanence in the market. Among the skills that have the greatest impact on employment, a specific weight is covered by transversal skills: "personal, relationships and learning skills" are defined by (Recommendation of the EU Council 189/2018 as key competences.

Objectives

The project will develop one deliverable, namely the adaptive learning web app containing a multilingual

catalog of modular teaching pills on the above-mentioned key competences, to be used in different foreign languages (CLIL): Italian, English, Spanish and German. Furthermore, the contents will be divided into 15-minute didactic objects (micro-learning) to allow a fruition in pills provided through ICT devices (desktop or mobile). The courses will be included in a Web Application for the use of asynchronous e-learning. The platform will use 2 technologies: adaptive learning and advanced analytics. A system powered by artificial intelligence will select for each user the didactic objects (among 544) most suitable for them and update the path based on individual learning outcomes. Advanced analysis and reporting systems will feed user dashboards aimed at both individual users (unemployed) and labour market operators who will be able to integrate the tool into the ordinary methods of verifying skills, orientation and training.

Results

The main result of the project has been the public release of the CLIKC platform, available at <https://clikc.eu>.

3.3 Geranium

Empowering Open Access of Polito publications using Semantics and Deep Learning.

Project Website	https://nexa.polito.it/geranium
Status	Suspended
Period	January 2019 – Present
Funding	In-kind
Funding organization	N/A
Persons in charge	Giovanni Garifo (Research Fellow)

Geranium is a research project carried out by the Nexa Center for Internet & Society with the Research Area of Politecnico di Torino (PoliTO), aiming at developing a platform to reduce the barriers for accessing scientific publications by citizens and create new collaboration opportunities between researchers.

The first achievements of the project are a: novel academic Knowledge Graph (KG), a search engine to explore the publications of PoliTO researchers and a recommendation system based on Graph Neural Networks.

An alpha version of the Geranium platform is available at:

<https://geranium.nexacenter.org>. All details related to the platform are available in the Master thesis of Giovanni Garifo (IT Manager and Research Fellow of the Nexa Center): <https://webthesis.biblio.polito.it/13163/>). The research project is currently suspended due to the lack of funding.

Background

PoliTO publications are currently available on the Institutional Research Information System (IRIS - <https://iris.polito.it/>) platform developed by the Cineca, a nonprofit Consortium made up of 67 Italian universities, 9 Italian Research Institutions, one

Polyclinic and the Italian Ministry of Education. The IRIS platform allows to explore publications of research institutions such as PoliTO, combining a search mask based on keywords with different filters. Nevertheless, the platform lacks a semantic infrastructure to contextualize and connect information related to different publications and authors. Moreover, the IRIS platform does not provide any mechanism to facilitate collaborations between the authors and departments, which share common research interests.



Objectives

The goal of this research project is to design and develop a semantic platform for the PoliTO publications available on IRIS. The current work is focused on the improvement of the Web application to explore contents related to both the papers and the research, introducing advanced filtering mechanisms. Moreover, we intend to increase the accuracy of the implemented recommendation system, whose goal is to suggest valuable connections between researchers.

Results

We developed the alpha version of the Geranium platform built on top of a novel academic KG, which semantically connects the information related to the publications available on IRIS. Geranium allows to explore details on authors and publications, through automatically extracted topics from the article abstracts. The topic extraction is performed by TellMeFirst

(<http://tellmefirst.polito.it>), a tool developed by the Nexa Center, that employs Wikipedia and semantic technologies for text classification tasks. Moreover, Geranium currently provides a recommendation mechanism, implemented using Graph Neural Networks, which suggest authors with common research interests. The first version of Geranium has been developed by: Giuseppe Futia (Project lead), Giovanni Garifo (lead software developer), Mehdi Khrichfa (back-end developer), Cosma Alex Vergari (front-end developer).

The results of this research produced the following publication: Garifo, G.; Futia, G.; Vetrò, A.; De Martin, J.C. The Geranium Platform: A KG-Based System for Academic Publications. Information 2021, 12, 366. <https://doi.org/10.3390/info12090366>

Institutional Networks

4.1 Global Network of Internet & Society Research Centers

A collaborative initiative among academic institutions with a focus on interdisciplinary research and a strong attention to the social impact and policy implications of their research agenda

Project Website	https://networkofcenters.net/
Status	ongoing
Period	October 2014 - present
Funding	80.000 € (until 2016)
Funding organization	Compagnia di San Paolo (in-kind from 2017)
Persons in charge	Juan Carlos De Martin (member of the steering committee)

The Global Network of Internet & Society Research Centers (NoC) is a collaborative initiative among academic institutions (<https://networkofcenters.net/centers>) with a focus on interdisciplinary research and strong attention to the social impact and policy implications of their research agenda.

Since late 2012, the Nexa Center is amongst its eight founding members and, between 2013 and 2014, has been involved in several NoC activities, as a member of the Steering Committee. In particular, the roadmap and guiding principles for the NoC were discussed, with the aim to set up common practices for knowledge exchange amongst the NoC members (such as learning calls, workshops and conferences), and joint research threads, focusing on interdisciplinary topics such as the role of online intermediaries, and Internet governance.

In October 2014 (until October 2016), the Nexa Center took the role of administrative coordinator of the Network, playing the role of contact point and facilitator. In particular, building on previous work and achievements, the main objective of the Nexa coordination strategy 2014-2016 was to contribute to making the NoC the most relevant Internet & Society research community worldwide both as a group of institutions and as a network of individuals.

Several initiatives were foreseen in this respect. Some of them relate to internal management (including the online presence of the NoC), others relate to the facilitation of research projects, such as the ones on Internet Governance models and on the role of Online Intermediaries (see <https://www.networkofcenters.net/research>), as well as other special initiatives, such as the public consultation on the Italian Declaration of Internet Rights.

Between 2015 and 2017, the Nexa Center worked on the development and implementation of a semantic connected platform (<https://noc-wiki.nexacenter.org>), an umbrella tool that connects knowledge, projects, people and resources from the world of NoC.

From 2018 onwards, including the reporting period, in addition to actively participating in the informal (hangout calls) and formal meetings of the NoC, the Nexa Center continued to collaborate with its community. The collaboration took the form of two main initiatives: the presentation (Elena Beretta) of the research paper "Ethical and Socially-Aware Data Labels" (https://nexa.polito.it/nexacenterfiles/Beretta_Data_Ethics.pdf) within the Conference "AI: Legal & Ethical Implications" held in the Center for Cyber Law & Policy, University of Haifa (<https://cyber.haifa.ac.il/>); the

collaboration to the first design of an Erasmus+ Jean Monnet - Networks initiative ("Growing European Societies in the Digital Age: Sustainability, Social and Legal Issues"), together with the Internet Interdisciplinary Institute (Barcelona), the Alexander von Humboldt Institute for Internet and Society (Berlin), the Center for Internet and Society (Paris), the Haifa Center for Law & Technology (Haifa) and the New Research on Digital Societies (Warsaw).

From 2019 onwards, the Nexa Center continued to collaborate with its community by participating to the "[NoC @IGF 2020](#)" and to the "[Research Sprint 'AI and Content Moderation'](#)". As part of the Internet Governance Forum 2020, the NoC organized, in collaboration with Wikimedia Italia, the Virtual Village Booth: the Nexa Center participated in the "[Interactive Chats](#)", with a speech by Juan Carlos De Martin (available [here](#)) to talk about the projects of the center and the experience of Biennale Tecnologia, and contributed to populating a virtual exhibition space dedicated to the works of the centers pertaining to the NoC. As part of the project "[The Ethics of Digitalisation – From Principles to Practices](#)", organized by Alexander von Humboldt Institute for Internet and Society (HIIG), the Nexa Center participated in the Research Sprint "AI and Content Moderation", with an interview with Juan Carlos De Martin and Antonio Vetrò: the sprint, which took place virtually over the

course of ten weeks from August until October 2020, was the first research format of the project “The Ethics of Digitalisation – from Principles to Practices” under the patronage of the German Federal President Frank-Walter Steinmeier. This project, which will run until July 2022, aims to foster a global dialogue on the ethics of digitalisation by

involving stakeholders from academia, civil society, policy, and the industry. The project comprises research sprints and smaller clinic formats hosted by several research institutes of the Global Network of Centers.

The Nexa Center continues to be part of the Executive Committee of the Network, participating to its meetings and

contributing to the governance of the initiative.



4.2 CINI – Laboratory for Informatics and Society

Laboratory of the Italian National Inter-University Consortium for Informatics. It fosters research collaborations between Italian Universities for supporting policy making in understanding and governing the digital revolution.

Project Website	https://www.consortio-cini.it/index.php/it/laboratori-nazionali/lab-informatica-e-societa
Status	ongoing
Period	<u>April 2016 - present</u>
Funding	N/A
Funding organization	N/A
Persons in charge	Juan Carlos De Martin (member of steering committee and coordinator of the Politecnico Node)

The CINI - Italian National Inter-University Consortium for Informatics (<https://www.consortio-cini.it/index.php/en/>), founded and directed by Prof. Juan Carlos De Martin (until December 2019), includes 10 national laboratories and 44 public Italian Universities, involving 1.300+ teachers in the scientific disciplinary sectors of Informatics and Computer

Engineering. It promotes and coordinates scientific activities - research and technology transfer - in the field of computer science, in concert with the national scientific communities of reference.

Since January 2020 the CINI -



Laboratory for Informatics and Society is headed by Prof. Viola Schiaffonati, Professor of Logic and Philosophy of Science at the Dipartimento di Elettronica, Informazione e Bioingegneria of Politecnico di Milano. Juan Carlos De Martin is member of the steering committee of the consortium, and he leads the Politecnico's node of the network.

4.3 Scienza Nuova – Italian Institute for Advanced Studies in Torino “Umberto Eco”

Scienza Nuova, the Italian Institute for Advanced Studies in Torino “Umberto Eco”, is the newly established research institute born from the cooperation between the University of Torino and the Politecnico di Torino (the memorandum of understanding signed by the two Rectors on 9 January 2019)

Project Website	https://www.scienzanuovainstitute.com/
Status	ongoing
Period	September 2019 - present
Funding	in-kind
Funding organization	N/A
Persons in charge	Juan Carlos De Martin (deputy director), Antonio Vetrò (member of the scientific committee)

Scienza Nuova has been officially inaugurated in September 2019 and aims to investigate the ongoing social transformations due to the Digital Revolution, and to train a selected number of scholars and operators able to manage these changes thanks to the connection of technological and humanistic knowledge. Its project is based on the theoretical content presented in the books “Università futura. Tra

democrazia e bit” (Codice Edizioni 2007) and “Scienza Nuova. Ontologia della trasformazione digitale” (Rosenberg & Sellier 2018).

Its working group is made up of the Labont – Center for Ontology (<https://labont.it>) and of the Nexa Center for Internet & Society (<https://nexa.polito.it/>). Its physical headquarters will be the Casa degli Spiriti in Corso Montevicchio n. 38, Turin. The

temporary headquarters is the Department of Philosophy and Educational Science. During the reporting period, no activities were done, due to the preparation of future changes in the governance: THESEUS will represent the Politecnico in the relaunch of Scienza Nuova.



Teaching Activities

5.1 "Politics and Technology": the course "Global Challenges" on digital challenges

The "Global Challenges" courses are an opportunity to deepen in a highly interdisciplinary way a specific topic of importance for the life of humanity, placing technology at the center but at the same time showing how technology is an integral part of our humanity and our living together on the planet.

Project Website	https://tinyurl.com/36cpnzux
Status	ongoing
Period	March – June (2022 - present)
Funding	Standard funding by Politecnico di Torino (additional support in kind)
Funding organization	Politecnico di Torino
Persons in charge	Juan Carlos De Martin (coordinator and lecturer), Massimo Cuono (lecturer), Isabella Consolati (lecturer), Marco Rondina (teaching assistant), Camilla Emmenegger (teaching assistant)

Technology has always played an important role in the great challenges that humanity faced. Whether we are talking about digital, energy, mobility, climate, health or technologies and humanity in general, technology is almost always at the center. However, the great challenges are practically never reducible to technical elements alone, neither when they are analyzed, nor when possible solutions are designed. To understand great human challenges and to deal with them successfully, the contribution of all forms of knowledge is necessary, from the technical-scientific to the humanities, from the social sciences to art. <https://nexa.polito.it/grandi-sfide>



The "Global Challenges" courses (4 for every challenge, totaling 24) are an opportunity to deepen in a highly interdisciplinary way a specific

topic of importance for the life of humanity, placing technology at the center but at the same time showing how technology is an integral part of our humanity and our living together on the planet. In this context, all "Global Challenges" courses will refer to the United Nations Sustainable Development Goals, a global initiative that is shaping many policies from the local to the international level. Social and political change and technical and technological development are normally studied separately, as autonomous and poorly correlated phenomena. Yet, a simple mobile phone "hides" a multiplicity of possible analysis levels, which are difficult to keep separate: from the strictly engineering dimension of design and construction to the geopolitical dimension linked to raw materials and the technical skills necessary for production, up to disposal policies (which are technical and political at the same time); from the transformations of technological capitalism, to the

design of the various applications, to the problem of the technologies of control; and much more.

In this course we aim to provide analytic tools useful for studying - also from a historical perspective - two main topics: on the one hand how technical and technological development cannot be isolated from the concrete power relations - economic, political and ideological - in which it is immersed; and on the other hand, how this development profoundly affects the widespread social imaginaries, transforming our way of thinking about the world in which we live. It's meant to be a dialogue between computer engineering and political philosophy that will touch on major theoretical issues - from the Promethean myth of technology to the conflicting relationship between democracy and knowledge - with a constant eye on concrete examples linked to the history of technology and the most recent developments.

5.2 "Responsible Artificial Intelligence": a Nexa-based computer-engineering graduate course

A Politecnico di Torino master course (Master of Science in Computer Engineering) aiming at raising awareness on the principles of a responsible development of Artificial Intelligence, as well as on the social conditioning on the developments of AI and, in wider terms, digital technologies.

Project Website	https://tinyurl.com/zy9fhsu3
Status	ongoing
Period	March – June 2023
Funding	Standard funding by Politecnico di Torino (additional support in-kind)
Funding organization	Politecnico di Torino + Nexa internal funding
Persons in charge	Juan Carlos De Martin (coordinator and lecturer), Antonio Vetro (lecturer).

Background

The deployment of Artificial Intelligence (AI) systems in several domains of society – e.g., welfare, insurance, finance, medicine, justice, education, etc. – has been raising important issues including those related to accountability, fairness and transparency of AI technologies. As a consequence, the notion of "responsible AI" has been recently adopted by a variety of



actors involved or affected by the development of AI: companies, civil society organizations, universities, governments and public institutions, scientific associations (such as IEEE and ACM). The main educational

goal of this course is to introduce students to the principles of responsible AI within the context of a general understanding of the social impact of technology and, vice versa, to the social conditioning on the developments of AI (and, more broadly, digital technologies). As a consequence the course will lead the students to better understand their role in society (including companies) both as computer engineering professionals and as citizens possessing certain technical-scientific skills.

Objectives

During the course, the students will develop the ability to discuss and reflect upon the ethical and societal aspects of AI technologies. More in details, the students will be able to reach the following learning objectives (L.O.):

(L.O.#1) Know and understand the duties of a software professional in relation to AI technologies and in general to software systems that become integrated into the infrastructure of society, as

recommended by ACM and IEEE, among others.

(L.O.#2) Analyze an AI system as a socio-technical system, highlighting how cultural, historical, socio-political, and economic aspects influence its development (and vice versa);

(L.O.#3) Evaluate the risks of negative consequences for individuals, vulnerable groups and in general for the public interest, related to design choices in the development of AI tools, as well as their positive impacts.

(L.O.#4) Formulate alternatives in the design of AI systems to reduce their negative impacts, highlighting the benefits and the values supported, also in relation to long term scenarios.

Results

The course is an evolution of the graduate course "Digital technologies and society", which took place from 2019 to 2022 (4 editions). Like its predecessor, this is an elective course. The students enrolled to the first edition were 42.

5.3 "Data Ethics and Data Protection": a Master Course at Politecnico di Torino

A Politecnico di Torino master course (Master of Science in Data Science and Engineering) aiming at giving students an increased awareness of the role of data scientists and data experts in society, and a better understanding of the main challenges that they face in developing innovative data-driven products and services.

Project Website	https://tinyurl.com/bpatvt5t
Status	ongoing
Period	March – June (2020 - present)
Funding	Standard funding by Politecnico di Torino (additional support in kind)
Funding organization	Politecnico di Torino + Nexa internal funding
Persons in charge	Antonio Vetrò (co-coordinator and lecturer)

Background

This course is mainly designed to give students an increased awareness of the role of data scientists and data experts in society, and a better understanding of the main challenges that they face in developing innovative data-driven products and services. Adopting an interdisciplinary approach, the course focuses both on ethical and legal issues, seen through the lens of technology. The hours of lectures are 60.

Objectives

The first part of the course provides a general overview of the interplay between law, ethics, and technology, addressing the most relevant issues in the ongoing debate on law & ethics with regard to data-intensive systems. In this context, data protection and AI regulations will be discussed, including risk assessment methodologies. The course then deals with the impact of

data use and AI on fundamental rights and ethical values, considering different proposals and guidelines on data ethics and socio-ethical impact management. The second part of the course is focused on the computer science perspective, with a focus on data-driven automated decisions making (ADM) systems. Students will analyse and interactively discuss in class selected case studies in relation to ethical issues raised by the deployment of ADM systems. Special attention will be devoted to the systematic discriminations and issues of inequalities. The reference point of such discussions will be the ACM Code of Ethics and Professional, necessary to understand the ethical and professional duties of data scientists and software practitioners. Students will also learn basic concepts and methodologies to design a risk assessment for ADM systems, evaluating the possible negative impacts of ADM systems for individuals,

vulnerable groups and society in general.

Results

The first edition of the course took place in the Academic Year 2019/2020 with 164 students enrolled. The number increased constantly in the following years: in A.Y. 2021/2022 students that enrolled in the course were 240, in A.Y. 2022/2023 the students enrolled are 244. The students acquire a greater awareness of the duties of a professional in the data science context and understand the impacts on people and society of the current data-driven algorithms and technologies. They also obtain a greater understanding of the ethical and legal values that should underpin the development of their products and services. Additionally, they acquire the proper skills to quantitatively and qualitatively estimate discriminate impacts on people from the execution of data-driven tools.

5.4 Semiotics of digital cultures: narratives about the meaning of AI and digital technologies between nonfiction and fiction

A course at the postgraduate degree in Communication and Media Cultures of the University of Turin

Project Website	https://media.campusnet.unito.it/do/corsi.pl/Show?_id=7lso
Status	ongoing
Period	2022 - present
Funding	Standard funding of Università degli Studi di Torino
Funding organization	Università degli Studi di Torino
Persons in charge	Antonio Santangelo (lecturer)

Background

"Semiotics of digital cultures" is a course for the postgraduate degree in Communication and Media Cultures of the University of Turin. The course aims to reflect on how the digital technologies that permeate our daily lives are changing the way we assign meaning to what we experience and communicate. Specifically, it focuses on how the advent of computers, the Internet, smartphones and now artificial intelligence have brought a structural change in the way the media system works, giving rise to new forms of media experience and new ways of telling ourselves and reality.

The course is an attempt by Antonio Santangelo to bring to the students of the University of Turin, mainly belonging to the field of humanities, some of the themes carried on at Nexa Center. In particular, the idea is to "translate" some of the contents of the old course "Digital Revolution", held by Juan Carlos de Martin at Politecnico di Torino.

Objectives

The overall training objectives of the course are the following:

(i) to understand the meaning of the choices made by those who design digital technologies such as, for example, Artificial Intelligence applications, through the lenses of semiotics. In this regard, the focus is on the influence of certain cultural models and values on the ideas that have led us to imagine and to use these technologies as we do today.

(ii) to understand how certain digital technologies, designed according to these choices, influence the functioning of our culture. In this regard, the focus is on some typical communication practices of our time, such as social networking around selfies, the processes of public opinion formation around the so-called "viral" contents, the spread and the "battle" against fake news and post-truth, the functioning of online content recommendation systems.

Results

So far, the course has been attended by more than 300 students and is still highly appreciated, in particular for what concerns the critics to the surveillance capitalist system, the new economic order powered by digital platforms, as well as the ethics of algorithms and of Artificial Intelligence.



5.5 "Software Engineering II": a Master Course at Politecnico di Torino

A Politecnico di Torino master course (Master of Science in Computer Engineering) aiming at expanding the knowledge and skills of students in the software engineering, especially concerning the management of the software development process, the organization of development activities, quality assurance, process improvement and software evolution.

Project Website	https://softeng.polito.it/courses/SE2/
Status	ongoing
Period	October – January (2019-present)
Funding	Standard funding by Politecnico di Torino (plus support in-kind)
Funding organization	Politecnico di Torino + Nexa internal funding
Persons in charge	Marco Torchiano (coordinator and lecturer, Nexa Faculty Fellow), Antonio Vetrò (lecturer)

Background

The knowledge that students acquired through the fundamental and optional courses mainly concerns technologies that can be used to build software systems (e.g. programming languages, web technologies, security, computer architectures) and basic techniques and tools to support development (e.g. deployment, version control, requirements, design). In order to effectively employ such knowledge and skills, it is fundamental to organize the development activities and manage them, curate the quality of the software products, and account for the inevitable characteristic of software: its persistent change. The course is part of the project "Fostering and Assessing Creativity and Critical Thinking Skills in Higher Education" coordinated by the Centre for Educational Research and Innovation (CERI) of the Organization for Economic Co-operation and Development (OECD).

Objectives

The students will acquire basic knowledge regarding:

- i) software development methods, focusing on agile methods
- ii) software quality assurance and process improvement, in particular static analysis and technical debt assessment,
- iii) software evolution dynamics.

A key component of software development (as it happens in the industrial context) is teamwork. Key skills to be developed include:

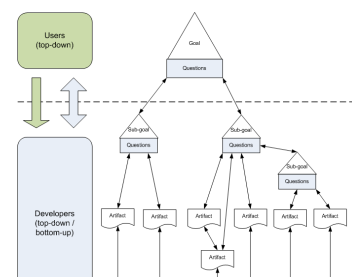
- i) coordination of individuals and their interactions,
- ii) planning and monitoring the project evolution,
- iii) manage stakeholders' collaboration,
- iv) set up self-organizing teams.

In the 2022 edition, elements of Value Sensitive Design were introduced in the context of the project "Fostering and Assessing Creativity and Critical Thinking Skills in Higher Education" with OECD.

Results

The number of enrolled students raised from 125 of the first edition to 143 of the last one in Autumn 2022.

The course is organized with a balance of theory (20% of the evaluation) and practice (80% of the evaluation): conventional lectures introduce the theory concerning the main topics of the course. Such lectures are followed by practical sessions (either collective exercises or hands-on development sessions). A key component of software development that is exercised in the course is teamwork, including a fruitful collaboration with stakeholders. The course obtained very high satisfaction among students throughout the years.



5.6 Web and E-Commerce Law

A University of Turin undergraduate course (BA in Global Law and Transnational Legal Studies) aiming to provide students with a critical understanding of law, regulation and governance of the web. The course covers legal issues of the internet as a means of communication, as a global marketplace and as a tool of mass-surveillance.

Project Website	https://www.giurisprudenza.unito.it/do/corsi.pl/Show?id=yosx
Status	Ongoing
Period	September – December (2022-present)
Funding	Standard funding by Università di Torino (plus support in-kind)
Funding organization	Università di Torino
Persons in charge	Maurizio Borghi (Nexa co-director; course convenor)

Background

The BA course in Global Law and Transnational Legal Studies is part of the Department of Law of the University of Turin. The course is a 3-years degree entirely taught in English, which aims to train students to be able to complete different professional tasks in the international context. The fields of expertise can go from business work to an institutional career, as well as careers in the world on NGOs and the third sector.

The course Web and E-Commerce Law is taught at year 3. It aims to provide students with a critical understanding of the web as a global marketplace in its own right. Students acquire knowledge of the applicable legal framework to online transactions and awareness of the main policy and regulatory issues of the web. They are introduced to the challenges of applying legal principles of human rights, private law, informational privacy and data protection in relation to factual scenarios emerging from the latest developments of the internet.

Objectives

Students are expected to demonstrate knowledge and understanding of:

- Regulatory mechanisms and key actors of governance in relation to the internet technical infrastructure, operative standards and content.
- Legislative instruments and remedies to resolve controversies arising in the context of e-commerce transactions.
- The fundamental rights and obligations that apply to processing and transfer of data within and beyond the European Union.
- The main legal and technical instruments to control and moderate content online, including liability rules for internet intermediaries such as hosting services, social media platforms and messaging apps.

Results

There were 150 students enrolled for the 2022 edition of the course, with around 100 attending the classes.

The course was divided into three parts, addressing i) the web as a means of communication, ii) the web as a global marketplace, and iii) the web as a mass-surveillance instruments. Each part included frontal lectures, seminar exercises and guest lectures with external experts covering a range of challenging subjects.

The 2022 course saw the participation of 6 guest lecturers, including Nexa fellows and faculties:

- Juan Carlos De Martin (Nexa co-Director), "The power of digital, the power over the digital" (28 September)
- Beatrice Balzola (Nexa intern), "Censorship and social media" (28 October)
- Giuseppe Vaciago (Nexa fellow), "Fraud in the Metaverse" (30 November)

5.7 Data Ethics and Protection

A Politecnico di Torino and Università di Torino joint master course (Master's degree in Digital Skills for Sustainable Societal) addressing the legal and regulatory challenges of the data economy, with particular respect to EU data protection law.

Project Website	https://didattica.polito.it/pls/portal30/gap.pkg_guide.viewGap?p_c od_ins=04TXHTD&p_a_acc=2023&p_header=S&p_lang=IT&multi=N
Status	Ongoing
Period	February – May (2022-present)
Funding	Standard funding by Politecnico di Torino and Università di Torino (plus support in-kind)
Funding organization	Interuniversity Department of Regional and Urban Studies and Planning (DIST), Politecnico di Torino and Università di Torino
Persons in charge	Maurizio Borghi (Nexa co-director) and Gianmaria Ajani (DIST)

Background

The master's degree course in 'Digital Skills for Sustainable Societal Transitions' aims to train the figure of the digital expert as a professional capable of declining the implications of information and communication technologies for the transition of societies and urban realities towards new models of relationships, production and consumption.

Within this programme, the course Data Ethics and Protection addresses the multi-faceted regulatory challenges of the data economy in the context of societal transitions. It aims to provide students with a critical understanding of the risks and perils of a data-driven society, as well as with awareness of the legal and regulatory options to mitigate those risks.

Students acquire knowledge of the applicable legal framework (with particular reference to the GDPR) and are introduced to the challenges of applying legal principles to factual scenarios emerging from societal transitions, such as smart cities, self-driving vehicles, mobility-on-demand, e-government and digital citizenship.

Objectives

The course focuses on the many aspects of the current international and European legal framework and it discusses how it applies to factual scenarios of the societal transition.

Having completed the course, the student is expected to be able to:

- Identify and ascertain key ethical issues related to the use of data and their impact on the IT industries, the users and the civil society.
- Engage critically with the complex and multi-faceted regulatory framework on the use of data and the legal and ethical issues that arise.
- Consider and evaluate the societal transitions in a reflective manner, including an evaluation of policy and regulatory options for maximizing the worth and minimizing risk of data-driven technologies.
- Demonstrate effective dissemination of findings to professional and academic standards.

Results

The number of enrolled students raised from 18 in the first edition to 54 in the second one in Spring 2023.

The course is divided into two parts, with the first part (prof. Ajani) addressing data ethics in the context of AI and autonomous agents, and the second one (prof. Borghi) covering the GDPR and its application to factual scenarios.

The course is structured in frontal lectures and seminar exercises. Students are invited to give presentations on selected case-studies.

This year's course also included a guest lectures of professor Ugo Pagallo (Nexa fellow) on the proposed EU regulation on artificial intelligence.

5.6 International Copyright

A University of Turin undergraduate course (BA in Global Law and Transnational Legal Studies) focused on copyright law in its international and comparative dimensions. The course provides knowledge of the relevant instruments of international law, as well as an understanding of key principles and doctrines applied in common-law and civil-law jurisdictions.

Project Website	https://www.giurisprudenza.unito.it/do/corsi.pl/Show?_id=gbyu
Status	Ongoing
Period	February - May (2021-present)
Funding	Standard funding by Università di Torino (plus support in-kind)
Funding organization	Università di Torino, Department of Law
Persons in charge	Maurizio Borghi (Nexa co-director; course convenor), Nicola Bottero (Nexa fellow; examiner)

Background

The BA course in Global Law and Transnational Legal Studies is part of the Department of Law of the University of Turin. The course is a 3-years degree entirely taught in English, which aims to train students to be able to complete different professional tasks in the international context. The fields of expertise can go from business work to an institutional career, as well as careers in the world on NGOs and the third sector.

The course International Copyright is an optional course taught at year 3. It aims to provide students with knowledge of both international and comparative dimensions of copyright law, with a focus on EU and US laws.

Objectives

Students are expected to be able to apply the relevant copyright principles, norms and legislative instruments to legal disputes arising from the use of creative expressions, both nationally and transnationally.

The course covers the following topics, in an international and comparative dimensions, with respect to key common-law and civil-law jurisdictions:

- Rationale and justifications for copyright protection
- Subject matter of copyright
- The right to reproduce the work and the impact of digital technology
- The right to communicate the work to the public
- Permitted acts: the US "fair use" doctrine and the European system of "exceptions & limitations"
- Authorship and first ownership of the work
- The author's "moral rights"
- Secondary liability and the exemptions for internet service providers
- Enforcement and remedies (essentials)

Results

101 students selected this optional course in 2023 (amounting to around 1/3 of the BA cohort). Teaching included frontal lectures and seminars exercises on case studies.

Students were required to prepare case comments on selected court decisions in preparation for the exam.

The textbook for the course was based on *Extended Readings on Copyright* by Matthew Sag, a work released under a Creative Commons International license (BY-NC-SA), modified and adapted by Maurizio Borghi to include reference to EU principles and jurisprudence.

The exam, consisting in the presentation of a case comment and an oral interview, is carried out in collaboration with Nicola Bottero (Nexa fellow).

5.7 Other teaching activities

The other teaching activities of the Nexa Community linked to the life of the Center.

Informatics is creativity

This course is offered to secondary school female students (3rd and 4th year), with the aim of promoting computer engineering without the gender stereotypes with which it is associated in the collective imagination. Antonio Vetrò, as a member of the Departmental Group on Diversity and Inclusion chaired by Prof. Tania Cerquitelli, participates to this initiative, which is offered in the context of the Pathways for Transversal Skills and Orientation (PCTO - <http://orienta.polito.it/it/pcto>) of Politecnico di Torino.

The course aims to stimulate and strengthen the problem-solving skills that are the basis of all engineering disciplines. Specifically, computer engineering is presented as a synthesis of analytical and creative thinking and creative thinking (problem solving), which dialogues with the possibilities offered by computer technologies. The program (20 hours) foresees a general introduction to problem solving and three training modules (data science, design and social impact of software, and gaming) in which a brief theoretical introduction is accompanied by exercises and laboratory activities carried out using simplified development tools. Finally, during the course the important historical role of women in the IT field is illustrated to stimulate a greater awareness of the historical context and its limitations, and the potential reversibility of the current gender imbalance. The course is open to all students (max 60 participants) without any specific experience in the field of programming / coding. The course includes a final challenge, in which students propose an innovative idea in an application context of their choice, among several proposals.

After the pilot project made in May/June 2022 with 7 students, the participants to the second edition in April/May 2023 were 21.

Nexa-supervised theses

In addition, as every year, young scholars collaborated **with the Nexa Center, working to support the Nexa Staff in the current activities. In the academic year 2022/2023**, During the reporting period, these students graduated under the supervision of Nexa Center staff members or they are currently working on their master thesis.

Year	Surname, Name	Thesis Title	Graduation Date	Supervisors
2022	ADRIGNOLA ANDREA	Dynamic identification of risk thresholds for balance measures in machine learning	29/07/2022	A.VETRO', M.MECATI
2022	AMATO DOMENICO FLAVIO	Approccio ibrido per la classificazione gerarchica automatica di oggetti di contratti della pubblica amministrazione italiana	13/04/2022	A.VETRO', J.DE MARTIN, D.ALLAVENA
2022	CAI SIQI	Design, development and test of a graphical user interface for visualizing data quality measurements on Italian Open Government Data	15/06/2022	A.VETRO', M.TORCHIANO
2022	CASTO ANTONIO	Sviluppo di un sistema di raccomandazione basato su adaptive learning e tecnologie semantiche	15/06/2022	A.VETRO', G.GARIFO
2022	OJHA UDITI	Towards fairness AI: A data-centric approach	28/10/2022	A.VETRO'

TEACHING ACTIVITIES

Year	Surname, Name	Thesis Title	Graduation Date	Supervisors
2022	RONDINA MARCO	Ethical Manufacturing of Datasets for Artificial Intelligence: an Empirical Investigation into the State of Documentation Practice	29/07/2022	A.VETRO', J.DE MARTIN
2022	SARPA AMEDEO	Development of a web application in an agile team improving the user story effort estimation process	28/10/2022	A.VETRO'
2022	SASSO SIMONE	Automated creation of Podcasts empowered by Text-To-Speech	20/12/2022	A.VETRO', G.GARIFO
2023	LOTFI BEHNAM	Sviluppo di un sistema di annotazione visiva dei dati basato sull'inferenza Bayesian	21/04/2023	A.VETRO', J.DE MARTIN
2023	VINCI FABIANA	Inclusive representation for Face Recognition analysis: an empirical investigation on critical issues and uncovered opportunities	21/04/2023	A.VETRO', J.DE MARTIN
2023	ZABOTTO GIULIO	Detection of Anomalous contracts of the Italian Public Administration	21/04/2023	A.VETRO', D.ALLAVENA
2023	COLLIANI FELICE PAOLO	Integrating large-scale language models with knowledge graph to create natural language processing based biomedical tools	<u>N/A</u>	<u>A.VETRO', G.GARIFO, G.FUTIA</u>
2023	GHEZELBASHYAN MOHAMMADALI	development of a mobile app to bypass internet censorship.	<u>N/A</u>	<u>M.MORISIO, A.VETRO'</u>
2023	LAUDADIO LORENZO	Development of a tool for analysing personal data tracked through web browsing	<u>N/A</u>	<u>A.VETRO'</u>
2023	MASON ALESSIO	Valutazione di esercizi di programmazione tramite debito tecnico	<u>N/A</u>	<u>M. TORCHIANO, A.VETRO'</u>

Funding, Organization, Relationships & Community

6.1 Budget summary

Table 1 below summarizes the total costs sustained by the Nexa Center in fiscal year 2022.

Research personnel		157,500 €
Nexa Center staff	94,000 €	
Tenured personnel	59,600 €	
Research PhD	3,900 €	
Other personnel		50,400 €
Other costs		61,100 €
Events organization and communication	19,800 €	
Travel (Nexa)	5,500 €	
Travel (guests/speakers)	500 €	
Equipment	3,000 €	
Functioning costs (heating, phone, cleaning, etc.)	5,600 €	
Outlays for the use of the Center venue	20,000 €	
Surplus from projects to PoliTo personnel	700 €	
Indirect costs (contribution to the Polytechnic University of Turin budget, deducted from Nexa projects)	6,000 €	
Total costs		270,000 €

Table 1 Nexa Center: costs sustained in 2022

"Other personnel" (see Table 1) includes administrative personnel (Selina Fenoglietto), personnel dealing with events and communication (Anita Botta), technical personnel (Giovanni Garifo), project manager (Giacomo Conti) and an estimate of the cost of other managerial activities, which are not directly related to research (e.g., 20% of the cost of Antonio Vetrò). Some cost entries (e.g., tenured personnel) include in kind contributions (see also Table 2 below).

The contribution of the Nexa Center to the budget of the Polytechnic University of Turin is calculated as the share of the external funding deducted by the central administration or the Department of Control and Computer Engineering (DAUIN), mainly to cover indirect costs. This amount will remain unchanged: it was 6.000 € in 2022 and it is projected to be 6,000 € in 2023.

Project / other source of funding	2022	2023	2024
StrategyHack	18,400 €	6,100 €	
Clikc	31,400 €	6,500 €	
SIFIS-HOME	11,900 €	8,500 €	
Past projects leftover	39,200 €	55,400 €	10,100 €
Grant from TIM S.p.A. (AI)	26,600 €	3,400 €	
Grant from TIM S.p.A. (Metaverse)		19,300 €	10,700 €
Gift from Foundation P&R		18,700 €	4,600 €
Research Ph.D.	3,900 €	31,800 €	44,100 €
Research funding by Polytechnic University of Turin	9,500 €	39,600 €	1,500 €
Contribution in kind from Polytechnic University of Turin (mainly personnel effort)	99,100 €	97,100 €	97,100 €
Contribution in kind from Prof. Marco Ricolfi	30,000 €	20,000 €	
Contribution in kind from Prof. Maurizio Borghi		20,000 €	30,000 €
Total	270,000 €	298,200 €	210,500 €

Table 2 Nexa Center: expected funding in 2022, 2023 and 2024 (as of April 2023)

Table 2 provides an overview of the sources of funding in 2022 and an estimation of the expected funding in 2023 and 2024, which are based on relatively conservative assumptions. In fact, only funding related to ongoing relationships and agreements (even without strict legal obligation to provide this funding, e.g. because it is subject to the discretionary evaluations of some funding institutions) is reported. No funding is listed in case of simple submitted and unapproved project proposals. It is also worth mentioning that some of the funding threads are likely to be available and used by the Center also beyond 2022. In those cases, the figures reported do not capture the entire amount of the funding.

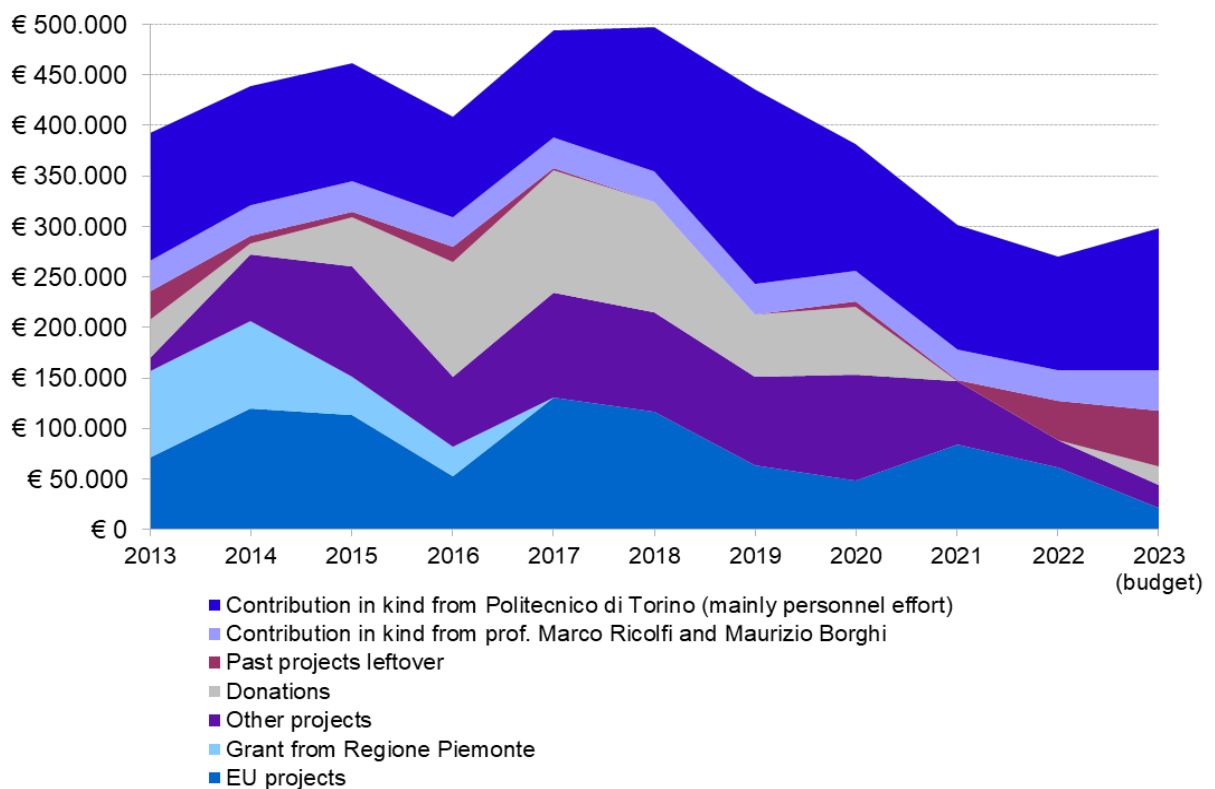


Figure 1. Composition of available financial resources (in Euros), 2013-2023

Figure 1 reports the composition of the available financial resources from 2013 to 2023 (forecasts only for 2021). It can be noticed that funding from Regione Piemonte dried up in 2017 but is counter-balanced by donations and by contributions in kind from Polytechnic University of Turin.

6.2 Accountability and transparency

The 'Accountability and transparency principles' of the Nexa Center are here reported, as finalized on December 10th, 2013, in light of the debate involving Nexa directors and trustees, and reported in the following page <https://nexa.polito.it/transparency-and-accountability>). The Nexa Center for Internet & Society is an independent research center. While the reputation of the center ultimately rests on the quality, consistency and integrity of its actions over the course of time, the Nexa Center also adopts several ex ante rules to support the independence of the center

both in substance as well as in external perception. In this regard, the issue of funding is particularly sensitive. As a general principle, the Nexa Center does not accept funding that may limit the ability of the center to carry out independent and unbiased research. The Center strives to ensure that its funding comes from a range of entities, including public sector bodies, foundations, the private sector and individuals, to minimize the dependency from any specific actor (or category of actors).

Since funding provided by for-profit entities is particularly

sensitive, during each reporting period, including the one covered by this Report, the Nexa Center is committed to follow accountability and transparency guidelines concerning for-profit funding. Such guidelines are formalized as follows:

(i) The existence and the nature of all funding over € 1,000 will be published on the website of the Nexa Center and regularly updated. Each year, the Nexa Center will also publish on its website the public version of its Annual Report, containing the same information.

(ii) In a given year, and as a

matter of principle, funding coming from any single for-profit entity should not exceed 15% of the budget of the Center in that year. This threshold will be reexamined at each annual meeting of the Board of Trustees, according to the general principle that, if the Center budget increases, this threshold will be proportionally reduced.

(iii) The overall contribution coming from for-profit entities should in principle not exceed 1/3 of the overall budget of the Center in that year.

(iv) If the aforementioned thresholds are to be exceeded, the case will be brought to the attention of the Board of

Trustees which will issue a binding recommendation to be included in the Annual Report.

(v) In any case, the relationship with for-profit funders will explicitly provide that the Nexa Center accepts to undertake a certain research activity based only on the scientific method and without being constrained by any previous indication or directive from the funder (e.g., in terms of expected deliverables and research products, apart from agreeing on the definition of the field of research and organizational details).

(vi) Consultancy and similar activities involving more specific directives from a third party, if undertaken, will be

clearly labeled as such.

(vii) Any changes to these policies will be subject to the approval of the Board of Trustees.

Regarding the reporting period, the funding guidelines have been respected as far as all points 1.-5. Regarding point 2, funding from a single for-profit entity (coming from TIM) remained below the 15% cap (implying a maximum funding of about 40.480 € in 2022). The same goes for the criteria expressed at point 3. Given the estimations of the 2023 budget, all criteria will be respected also in the next reporting period.

Funding coming from for-profit entities	% of 2022 budget (absolute value)	% of 2023 budget (absolute value)
TIM	9,85 %	7,61 %
TIM S.p.A. Via G. Negri 1, 20123 Milano	(26,600 €)	(22,700 €)
Total from for-profit entities	9,85 %	7,61 %

Funding coming from no-profit entities	% of 2022 budget (absolute value)	% of 2023 budget (absolute value)
Foundation P&R		6,27%
Foundation P&R, Via dell'Annunciata 23/2 20121 Milano		(18,700 €)
Total from for-profit entities	0,0 %	6,27 %

6.3 Project Proposals

6.3.1 VALUE-VERSE

Project Website	N/A
Status	Under Evaluation
Period	N/A (Duration 36 months)
Funding	2.000.000€ (429,000€ for Nexa)
Funding organization	EU Horizon Programme
Brief description	<p>This project aims to unify and consolidate the emerging but currently fragmented discussions on how to design and maintain an open and decentralised Metaverse based on European values and principles. The overarching goal of the proposed ValueVerse-project is to foster the emergence of an open, human-centred Metaverse that encodes and promotes European values and creates an ecosystem conducive to a flourishing European Metaverse industry. ValueVerse adopts a circular translation model with three analytically distinct, yet intentionally interoperable mechanisms that are driven by stakeholder engagement: (1) The Metaverse Community Forum for identifying and prioritising issues and organising action around them; (2) the Metaverse Policy Lab as an exploratory space to co-create, test, and define policy instruments in response to the issues identified in (1); and (3) the Accelerating Partnerships Program that provides on-the-ground support to various stakeholders in specified high-impact areas and with a commitment to the public interest.</p>
People in Charge	Juan Carlos De Martin (Nexa Principal Investigator); Antonio Vetrò

6.3.2 DigPol – A political vocabulary for the digital age

Project Website	N/A
Status	Under Evaluation
Period	(Duration 24 months)
Funding	291.676 € (75,270€ for Polito)
Funding organization	PRIN-PNRR 2022
Brief description	<p>The project aims to provide a political vocabulary for the digital age, examining the social and political impacts of digitalization from the perspective of conceptual history and feminist theory. The project is guided by two key questions: 1. to what extent does the alleged objectivity used to legitimize the automation of decision-making processes at all levels of public governance prevent the possibility of democratic political and social participation? 2. to what extent does the use of digital technologies for commercial purposes, for security reasons and to 'rate' conditions of social disadvantage codify social hierarchies as computable differences, thus undermining the possibility of questioning the social causes of inequalities?</p>
People in charge	Antonio Vetrò

6.3.3 SOLID – welfare and equality democratic responsiveness of algorithms across social groups and locations

Project Website	N/A
Status	Rejected
Period	N/A (Duration 36 months)
Funding	2.982.688 € (321.623 € for Nexa)
Funding organization	EU Horizon Programme
Brief description	SOLID develops Solidarity-Centered AI (Solidary AI) that advances collective and institutional capacities for enacting European values of cohesion, democracy and solidarity. SOLID goes beyond state of the art by investigating inherent biases and developing knowledge, policies, and models for improving the quality and social sustainability of AI in the public sector regarding Social Protection and Unemployment and Families/Children. SOLID gathers a EU geographically wide and interdisciplinary consortium of excellent European partners with expertise on territorial inequality; social data science, AI software and visualization; social welfare policy and work as well as democratic engagement in AI. SOLID offers mapping and visualization of socio-geographic patterns in development and use of AI; bias testing and algorithmic benchmarking of AI solutions; development of new interactive policy tools; innovation of models for democratizing AI through processes of democratic debate involving citizens, policy- and decision-makers, communities and end-users affected directly by the use of AI.
People in Charge	Antonio Vetrò (Nexa Principal Investigator), Juan Carlos de Martin, Marco Torchiano

6.3.4 META-DT – Scalable context-dependent operational planning with extreme data at container yards using a meta digital twin approach

Project Website	N/A
Status	Rejected
Period	N/A (Duration 36 months)
Funding	5.600.000 € (286.500 € for Nexa)
Funding organization	EU Horizon Programme

Brief description	This project aims to achieve a radical improvement in container terminal performance through the implementation of a meta-Digital Twin (MDT) of the Rubber Gantry Crane (RTG).
People in charge	Juan Carlos De Martin (Nexa Principal investigator), Giacomo Conti

6.3.5 Educounter – Educating with counter-narratives to depolarisation in conflicts between religious cultures

Project Website	N/A
Status	Rejected
Period	N/A
Funding	898.672 € (250.000 € for Nexa)
Funding organization	Fondazione Compagnia di San Paolo (Torino)
Brief description	The project aims to use AI algorithms to identify and relate media narratives in clashes between religious cultures, in order to stimulate depolarization. The project intends to experiment with Artificial Intelligence algorithms that can be used in schools, in the press and on social networks, to identify and relate the various media narratives at play in clashes between religious cultures, to understand which ones can serve as counter-narratives to the more polarising ones, and to circulate and discuss them, stimulating depolarisation.
People in charge	Juan Carlos de Martin (Nexa Principal Investigator), Antonio Vetrò, Antonio Santangelo, Giovanni Garifo

6.3.6 Smart Great Pescara Mark Up – Casa delle Tecnologie Emergenti di Pescara

Project Website	N/A
Status	Rejected
Period	N/A (duration 36 months)
Funding	11.524.554€ (300.000€ for Polito)
Funding organization	PNRR
Brief description	The project aims at creating a Place for Experimentation, Prototyping and Implementation of Technologies related to the Development of New Generation Connection and Communication Networks, capable of generating technological, social, economic and environmental opportunities for Citizens and Companies. The project is characterized by its focus on 3 verticals of public and private interest: Mobility, Environment, and Energy.
People in charge	Antonio Vetrò

6.3.7 OPENNESS

Project Website	N/A
Status	Rejected
Period	N/A (3 years)
Funding	2,929,000 € (130,000 € for UNITO)
Funding organization	European Commission, Horizon Europe Framework Programme (HORIZON)
Brief description	Research proposal in response to the call HORIZON-CL3-2022-FCT-01-04 Public spaces are protected while respecting privacy and avoiding mass surveillance. The central research question for OPENNESS is how to improve understanding and transparency to help law enforcement agencies, municipalities and private surveillance operators to design more inclusive, more effective and more responsible surveillance capabilities. The objectives of OPENNESS are i) to collect, structure, analyse and clarify information about large scale surveillance practices and systems; ii) to engage with citizens at various institutional levels about locally relevant surveillance and their applicable rights, iii) to (re)design realistic surveillance concepts for the protection of public spaces taking ethical, legal and societal aspects into account , and iv) to elicit and describe good practices by local authorities, operators and policy makers and to suggest them to standards bodies.
People in charge	Maurizio Borghi

6.3.8 RAISE

Project Website	N/A
Status	Rejected
Period	N/A (duration 24 months)
Funding	815,000 € (115,000 € for POLITO)
Funding organization	Compagnia di Sanpaolo
Brief description	RAISE Framework prevent, manage and alleviate risks that are related to the adoption of AI by insurance innovators. To this end, RAISE integrates disciplinary perspectives namely the sciences of automation engineering and artificial intelligence, the sciences concerning regulatory and legal compliance, and insurance economics and technology, and develops, innovatively, a multidisciplinary and multidimensional project in which the expertise of researchers, insurers, and start-up companies, converge with a precise application goal: to analyze the aforementioned risks in order to define and test technological and social solutions to protect insurance companies and customer-consumers.
People in charge	Marco Torchiano, Antonio Vetrò

6.4 Nexa Community

Nexa Trustees

The current list of the Nexa Trustees is available on page 63 of this report

The Trustees of the Nexa Center for Internet & Society is a group of prominent personalities from the international academic and cultural world that evaluates the activities and monitors the independence and reputation of the Center. The Board of Trustees meets in Turin at least once a year. During the meeting, which is open to all Nexa Staff and Fellows, the Board discusses with the participants the general "Internet & Society" scenario and provides advice and recommendations about future activities.

In A.Y. 2021/2022 there are no new entries in the Nexa Trustees community.

Nexa Fellows and Faculty Associates

The current list of Fellows and Faculty Associates is available on page 69 of this report.

Since its creation, the Nexa Center took advantage of the cooperation of a group of more or less strictly connected fellows, who provided countless insights and enriched the knowledge-sharing activity of the Nexa Center.

The explicit model for this kind of interaction was the network of fellows of the Berkman Center for Internet & Society at Harvard University, clearly with several adaptations and on a smaller scale. While Nexa Center Fellows typically contribute pro bono to the activities of the center, some of them, the "Research Fellows", conduct their research specifically for the Nexa Center as Ph.Ds students or with some kind of research grant (e.g., as "assegnisti di ricerca").

"Faculty Fellows" are tenured professors of the Politecnico di Torino or the University of Torino, which are the two universities forming the academic constituency of the Nexa Center. In 2013 the Nexa Center created the position of "Faculty Associate", i.e., scholars and lecturers whose field of research covers topics of interest for the Nexa Center. Formally becoming a Fellow of the Nexa Center implies the membership in a closed mailing-list devoted to the Fellows, the possibility of taking part to internal "closed-doors" meetings at the Center (for instance, brainstorming sessions, but also the meeting of the Board of Trustees) and, of course, the possibility of publicly using the title of Nexa Center for Internet & Society Fellow, and of appearing as such on the Nexa Center website.

Outreach

7.1 Introduction

During the reporting period our communication strategy has been fine-tuned, devoting efforts to highlighting the results of research projects and creating new opportunities for debate,



discussion, and collaborations. To achieve this, the Nexa Center continues to collaborate with the University of Turin in order to promote an interdisciplinary approach to the topics covered during the events. Numerous meetings were organised in collaboration with the University of Turin, thanks mainly to the work of the new co-director of the Nexa Center, Maurizio Borghi, whose appointment was made official in September 2022.

This year the Center also welcomed a new PhD student, Marco Rondina. Over the next three years he will conduct research on "Responsible AI: from principles to practice", a study that aims at investigating the impact of poor data quality and biases in the data on the automatic decisions made by software applications.

The Center took part in the 2022 edition of the **Biennale Tecnologia**, which took place in

Turin from November 10 to November 13, 2022: the event paid particular attention to the relationship between technology and society, involving the co-director of the center, Juan Carlos De Martin, and some of the center's trustees and fellows among the guests at the meetings. The theme of this edition of the **Biennale Tecnologia** was "Principles - Building for Generations". The event has been implemented in a tried and tested formula that has seen more than 100 appointments alternating between lectures, dialogues, meetings, debates, exhibitions and performances, all distributed in the main venues of the Politecnico in Corso Duca degli Abruzzi and the Valentino Castle, but also in the spaces of the Circolo dei lettori - a partner since the first edition of the event - and the Officine Grandi Riparazioni, which have become a prestigious venue this year thanks to the partnership with OGR Torino and the support of the Fondazione CRT.



The Center also took part in the 2023 edition of the **Biennale Democrazia**, which took place in

Turin from March 22 to March 26, 2023: the event paid particular attention to the theme "Internet and Democracy", involving, in particular, the co-director of the Center Juan Carlos De Martin. The theme of this edition of the **Biennale Democrazia** was "On the edge of freedom", with the aim of returning to the fundamental issues affecting our democratic systems, starting with freedom, which, together with equality, constitutes the very foundation of democracy.

In order to focus on and to promote quantitative and interdisciplinary analysis of the force of the Internet and its impact on society, the Nexa Center continues its collaboration with **DigitCult**, an academic journal of international scope, double-blind peer-reviewed and open access, aiming to value international research and to present current debate on digital culture, technological innovation and social change.

Finally, we would like to highlight that this year the Nexa Center reached the important milestone of **100 Nexa Lunch Seminar**, with special thanks to all who contributed to the realisation of such a significant number of meetings. We hope, therefore, that these meetings, with their multidisciplinary approach characteristic of the Center's work, have positively influenced the public debate on digital and new technologies in relation to our society, and the way we perceive and interpret the world, in order to achieve a better future, together.

7.2 14th Annual Conference: "Science fiction from around the globe: the future of digital society"

The 14th yearly Nexa Conference on Internet & Society took place on December 2nd, 2022, at the Conference Room "Luigi Ciminiera". The Conference was organized in collaboration with MUFANT – Museo del Fantastico e della Fantascienza di Torino, and lasted from 10.00 am to 6.30 pm.

This year the conference focused on "the future of digital societies", calling for the contribution of science fiction from around the world. Science fiction, in fact, has often tried to delineate potential societal futures based on technological trends, offering a critical look into the present of the complex relationship between technological innovations and humanity. Involving writers from Africa to America, from China to Italy, an attempt was made to imagine how, today and in the near future, art, identity, spirituality, affectivity, life, death and, in a single word, Humanity, can be shaped by the increasingly decisive role of digital technologies.

On the subject of science fiction in the Turin scene, Nexa Center

trustee Bruce Sterling spoke, bringing to the audience's attention the theme of the future analysed in his works. The afternoon began with a debate between the director of MUFANT – Museo del Fantastico e della



Fantascienza di Torino and Chinese writer Xie Yunning on how the digital revolution is being told in Chinese science fiction literature. The second discussion involved Taiwanese writer Chi Tawei and editor Ilaria Peretti on the themes of existence, identity and the relationship with machines in

Taiwanese science fiction literature. The last panel of the day featured a debate between writers from different parts of the world, Argentina, Africa and Italy. The three guests Martín Felipe Castagnet, Tlotso Tsamasee and Alessandro Vietti debated under the moderation of editor Giorgio Raffaelli. The theme of the panel was: "Technologies for living, dying, rebirth: a multicultural Science Fiction perspective".

The Conference has been extensively communicated through the website, the mailing lists and the social media channels of the Nexa Center and in close collaboration with the Communication Departments of the Polytechnic University of Turin and the University of Turin.

The Conference was broadcasted live on our Youtube channel and supported by live tweeting (using the hashtag #nexa2022).

For additional information, see <https://nexa.polito.it/conf2022>.

7.3 Nexa Wednesdays

Since September 2008, the monthly meetings - open to the public - called "Nexa Wednesdays" became a regular appointment for the Nexa Center fellows and friends since September 2008. As of September 2022, the meeting time was changed from 6.00pm-8.00pm to 5.00pm-7.00pm.

Meetings can be attended both in person, at the Nexa Center meeting room, and remotely, by accessing the virtual BigBlueButton room set up by the staff. Attendance at Nexa Wednesdays usually exceeds 20 and sometimes 30 participants. In order to promote an interdisciplinary exchange on the

Internet & Society field, and also introducing new people to the discussion, guests of the meeting are encouraged to use a simple language, avoiding unnecessary technicalities. You can find a list of all the Nexa Wednesdays at <https://nexa.polito.it/mercoledì>.

This is a short summary of Nexa Wednesdays that have taken place during the last reporting period:

151st Nexa Wednesday: *Reflections on the future of the Nexa Center: new perspectives and growth scenarios*; May 18, 2022; Closed-door meeting for staff, fellows and trustees of the Nexa Center.

152nd Nexa Wednesday: *Manipulation and social media: the case study of the immigration debate*; June 8, 2022; guest: Giancarlo Ruffo (Università di Torino).

153rd Nexa Wednesday: *Cooperation and consistency mechanisms for settling cases of cross-border processing of personal data four years after the implementation of the GDPR*; July 13, 2022; guest: Monica A. Senor (Autorità garante per la protezione dei dati personali and Fellow Centro Nexa).

154th Nexa Wednesday: *The politics of data. The governance of new technologies between law, economy and society*; September 14, 2022; guest: Eleonora Bassi (Fellow Nexa Center).

155th Nexa Wednesday: *Beyond Data. Human Rights, Ethical and Social Impact Assessment in AI*; October 12, 2022; guest: Alessandro Mantelero (Politecnico di Torino).

156th Nexa Wednesday: *Security and Privacy in the New Generation Smart Home - The SIFIS-Home Project*; November 9, 2022; guest: Andrea Saracino (CNR - Istituto di Informatica e Telematica).

157th Nexa Wednesday: *The legal qualification of terms of use of digital platforms*; December 14, 2022; guest: Alessandra Quarta (Università di Torino).

158th Nexa Wednesday: *Digital Commons, Governance and AI Algorithmic Management*; January 11, 2023; guest: Nicolas Jullien (IMT Atlantique).

159th Nexa Wednesday: *Algorithmic Management: Features, Impacts, Legal Issues. What's the Current State of Play?*; February 8, 2023; guest: Aide Ponce Del Castillo (European Trade Union Institute).

160th Nexa Wednesday: *Classifying, abstracting, deciding in uncertain social contexts: the dangerous relationships between humans and 'intelligent' machines*; March 8, 2023; guest: Teresa Numerico (Università di Roma Tre).

161st Nexa Wednesday: *The IT revolution. Knowledge, awareness and power in the digital society*; April 12, 2023; guest: Enrico Nardelli (Università di Roma "Tor Vergata").



7.4 Nexa Lunch Seminars

Since May 2012, the Nexa Center launched a series of meetings entitled "Nexa Lunch Seminars" held on the fourth Wednesday of the month, from 13.00 to 14.00. As in the case of Nexa Wednesdays, Meetings can be attended both in person, at the Nexa Center meeting room, and remotely, by accessing the virtual BigBlueButton room set up by the staff. Audience interactions and dissemination are treated similarly as in the Nexa Wednesdays. A list of the Nexa Lunch Seminars is available at: <http://nexa.polito.it/lunch-seminars>.

This is a short summary of Nexa Lunch Seminars that have taken place during the last reporting period:

98th Nexa Lunch Seminar: *Activist digital disconnections: repertoires, limits, horizons*; May 25, 2022; guest: Emiliano Treré (Cardiff University).

99th Nexa Lunch Seminar: *Interactive systems and medicine, the role of knowledge graphs for natural language entity recognition*; June 22, 2022; guest: Giuseppe Futia (Fellow Nexa Center).

100th Nexa Lunch Seminar: *Ethical production of datasets for artificial intelligence: the role of documentation*; September 28, 2022; guest: Marco Rondina (Politecnico di Torino).

101st Nexa Lunch Seminar: *Prison and digital exclusion: do technological skills affect social reintegration?*; October 26, 2022; guest: Beatrice Balzola (Università di Torino).

102nd Nexa Lunch Seminar: *Strategy and Innovation in Education: the Erasmus+ StrategyHack project*; November 23, 2022; guest: Stefano Boldi (Università di Udine).

103rd Nexa Lunch Seminar: *Facial recognition: how to identify critical issues and include neglected cases?*; February 22, 2023; guest: Fabiana Vinci (Politecnico di Torino).

104th Nexa Lunch Seminar: *Semiotics and Artificial Intelligence*; March 22, 2023; guest: Antonio Santangelo (Università di Torino).

105th Nexa Lunch Seminar: *Ideal technologies, ideal women: Looking at Redditors' AI and gender imaginaries of the Replika chatbot*; April 26, 2023; guest: Iliana Depounti (University of Loughborough).





7.5 Nexa Research Seminars

Since 2018 the Nexa Center has launched a new series of meetings entitled "Nexa Research Seminars", which have involved both Nexa staff and fellows.

The Nexa Research Seminars promote in-depth discussions on topics related to Internet and Society. The talks are meant to facilitate digital education by generating

discussion on recently published books and ongoing research projects.

This is a short summary of Nexa Research Seminars that have taken place during the last reporting period:

Dominio (Marco D'Eramo, Feltrinelli, 2020): September 29, 2022; held by Juan Carlos De Martin (Politecnico di Torino).

Occupare il futuro. Prevedere, anticipare e trasformare il mondo di domani (Roberto Paura, Codice, 2022): November 24, 2022; held by Antonio Santangelo (Università di Torino).

Chip War: The Fight for the World's Most Critical Technology (Chris Miller, Scribner, 2022): January 26, 2023; held by Juan Carlos De Martin (Politecnico di Torino).

L'uomo artigiano (Richard Sennet, Feltrinelli, 2008): February 16, 2023; held by Antonio Vetrò (Politecnico di Torino).

L'ordine del sapere (Alberto Cevolini, Mimesis Edizioni, 2022): March 23, 2023; held by Giovanni Leghissa (Università di Torino).

Resisting AI. An Anti-fascist Approach to Artificial Intelligence (Dan McQuillan, Bristol University Press, 2022): April 26, 2023; held by Maurizio Borghi (Università di Torino).

7.6 Other Meetings

Below you can find a list of other meetings organized by the Center during the reporting period:

Algorithmic Fairness Datasets: Supporting Principled Data Practices; November 7, 2022; host: Alessandro Fabris (Università di Padova); discussant: Gian Antonio Susto (Università di Padova).

Biennale Tecnologia: the 2022 edition of Biennale Tecnologia, which took place in Turin from the 10th to the 13th of November, devoted ample space to the theme "Internet and Society", proposing a series of meetings with the participation of the co-directors and some trustees and fellows of the Nexa Center for Internet and Society of the Politecnico di Torino. The theme of this edition of the Biennale Democrazia is "Principles - Building for Generations". The event has been implemented in a tried and tested formula that has seen

more than 100 appointments alternating between lectures, dialogues, meetings, debates, exhibitions and performances, all distributed in the main venues of the Politecnico in Corso Duca degli Abruzzi and the Valentino Castle, but also in the spaces of the Circolo dei lettori - a partner since the first edition of the event - and the Officine Grandi Riparazioni, which have become a prestigious venue this year thanks to the partnership with OGR Torino and the support of the Fondazione CRT.

Here the meetings held by some of the trustees, fellows and staff members of the Nexa Center within the Biennale Tecnologia:

Towards a truly artificial intelligence: November 11, 2022; introduced by Luca De Biase (trustee Nexa Center).

The principles of the principle: November 11, 2022; moderated by Juan Carlos De Martin (co-director Nexa Center).

Digital inclusion for a new citizenship: November 11, 2022; held by Fabio Nascimbeni (fellow Nexa Center).

The future is digital: what role for Europe?: November 11, 2022; held by Juan Carlos De Martin (co-director Nexa Center).

Challenges and opportunities of School Plan 4.0: November 11, 2022; held by Lorenzo Benussi (fellow Nexa Center).

From discipline to control: November 11, 2022; introduced by Juan Carlos De Martin (co-director Nexa Center).

The future of work and the demand for new skills: November 11, 2022; introduced by Luca De Biase (trustee Nexa Center).

How to stimulate the digitisation of Italian companies: November 11, 2022; held by Mario Calderini (trustee Nexa Center).

Under 18 and digital: a hope for the future: November 12, 2022; held by Sandra Cortesi (trustee Nexa Center).

God's machines: November 12, 2022; introduced by Luca De Biase (trustee Nexa Center).

The pin and the elephant. A philosophical reading on technology, humanity and hope - part 1 "Grappling with machines. Chain thinking from Adam Smith to the riders": November 12, 2022; held by Enrico Donaggio (faculty fellow Nexa Center).

The pin and the elephant. A philosophical reading on technology, humanity and hope - part 2 "Taking back the machines. Stories of redemption between Italy and France": November 12, 2022; held by Enrico Donaggio (faculty fellow Nexa Center).

Automation and the future of work: November 12, 2022; held by Antonio Casilli (faculty fellow Nexa Center).

The New Art of Artificial Intelligence: November 12, 2022; held by Bruce Sterling (trustee Nexa Center), with the participation of Jasmina Tešanović (trustee Nexa Center).

Who is still afraid of Julian Assange and WikiLeaks: November 13, 2022; introduced by Carlo Blengino (fellow Nexa Center).

Stefano Rodotà, master of long life: November 13, 2022; held by Francesca Bria (trustee Nexa Center), Juan Carlos De Martin (co-director Nexa Center), Bruce Sterling (trustee Nexa Center) and Luca De Biase (trustee Nexa Center).

Artificial intelligence: sentient or demented?: November 13, 2022; held by Stefano Quintarelli (trustee Nexa Center).

Why trust science?: November 13, 2022; introduced by Juan Carlos De Martin (co-director Nexa Center).



For knowledge in action: Bildung and Paideia: November 13, 2022; introduced by Juan Carlos De Martin (co-director Nexa Center).

Biennale Democrazia: the 2023 edition of Biennale Democrazia, which took place in Turin from the 22nd to the 26th of March, devoted ample space to the theme "Internet and Democracy", proposing a series of meetings with the participation of Juan Carlos De Martin, co-director of the Nexa Center for Internet and Society of the Politecnico di Torino. The theme of this edition of the Biennale Democrazia is "On the edge of freedom", with the aim of returning to the fundamental issues affecting our democratic systems, starting with freedom, which, together with equality, constitutes the very foundation of democracy.



Here the meetings held or introduced by Nexa Center co-director of the Juan Carlos De Martin within the event:

Artificial Intelligence and Magical Thinking: March 23, 2023; held by Juan Carlos De Martin (co-director Nexa Center).

Geopolitic of Cyberspace: March 25, 2023; introduced by Juan Carlos De Martin (co-director Nexa Center).

7.7 External Events

Below you can find a list of external events in which the Center has participated during the reporting period:

The 'intellectual property' of intellectual works: incentive to creativity or monopoly on knowledge?: Marco Ricolfi and Deborah De Angelis were invited to speak at the conference organized by the Law Department of the University of Siena, which took place on June 17, 2022.

Annual Conference of the Master in Intellectual Property - International Seminar on "Intellectual Property, Resilience and Recovery": Marco Ricolfi, Maurizio Borghi and Alessandro Cogo participated in the conference organized by the World Intellectual Property Organization, ITC ILO and the University of Turin (July 15, 2022).

Freedom of expression in the age of social media: Juan Carlos De Martin was invited to speak at the Conference organised by the CESIFIN Foundation Alberto Predieri, which took place on October 3, 2022. He spoke on panel IV "Platforms and Algorithms".

Science and technology: the reasons for (s)confidence: Juan Carlos De Martin spoke in dialogue with Enrico Pedemonte, author of the book 'Fear of Science' (Treccani Libri) and Teresa Numerico (Roma Tre University). The event, which took place on October 11, 2022, was organized in collaboration with Biennale Tecnologia.

A look at digital ethics: Antonio Vetrò was invited to talk at the 10th Festival of Innovation and Science, which took place on October 12, 2022.

Learning through gaming: Giacomo Conti was invited to talk at the 10th Festival of Innovation and Science, which took place on October 14, 2022.

Against the smartphone: Juan Carlos De Martin was invited to talk at the 10th Festival of Innovation and Science, which took place on October 16, 2022.

Internet of Things and the Law: Legal Strategies for Consumer-Centric Smart Technologies: Guido Noto La Diega was invited to talk at the seminar organized by Nexa Center and University of Turin on October 19, 2022. The event was presented by Maurizio Borghi.

Open Science and Open Data in Biomedical Research: Maurizio Borghi participated in the conference organised by the University of Trento, Faculty of Law, Open Access, and AISA (Italian Association for the Promotion of Open Science). The event took place on October 28, 2022.

A European Artificial Intelligence Standard?: Ugo Pagallo, Marco Ciurcina and Luca Peyron participated in the conference organised by Ordine Avvocati Torino, under the patronage of the University of Turin, Department of Law and Polytechnic University of Turin. The event took place on October 28, 2022.

Symposium: "Face it! The New Challenges of Cognitive Visual Semiotics": Antonio Santangelo was invited to talk at the congress organised by Maria Giulia Dondero, Massimo Leone and Claudio Paolucci, with the collaboration of Ralph Dekoninck and Thierry Lenain. The title of his speech was *"What artificial intelligence tells us about ourself. Starting from the experience of Fresco and Facets"*. The event was held from 25 to 27 January 2023.

Law, Regulation and Governance in the Information Society: Informational Rights and Informational Wrongs: Maurizio Borghi, Marco Ricolfi, Massimo Durante and Ugo Pagallo participated in the event for the presentation of the book by Maurizio Borghi and Roger Brownsword, and published by Routledge. The event took place on May 3, 2023.

Technology, Humans, and Discontent with Law: The Quest for Better Governance: Maurizio Borghi participated in the Public Lecture by Professor Roger Brownsword (King's College London and Bournemouth University), which took place on May 4, 2023.



7.8 Website

To better understand the trend of Nexa's outreach worldwide in the last months, you can see below the table showing the trend of visits and actions on the Center's website in the period from August

OUTREACH

2022 to April 2023, a significant period for measuring the degree of public interest in the activities carried out in the last academic year.

The reported data show a positive increase in visits, which peaked in February and March 2023. This growth, which started at the beginning of the calendar year, can be explained by the creation of a calendar of meetings with guests from outside the Center, prominent figures on the Italian and European digital scene. These guests, from Nicolas Jullien to Enrico Nardelli, offered very interesting talks and engaged the audience in long and stimulating discussions.

Given the success of the initiative, we aim to repeat the experience by inviting new guests who can bring new scenarios and expertise to the Center.

	Var %	MAR-APR 2023	FEB-MAR 2023	JAN-FEB 2023	DEC-JAN 2022-2023	NOV-DIC 2022	OCT-NOV 2022	SEP-OCT 2022	AUG-SEP 2022
Views	18,66	1952	3631	1241	2125	1656	879	748	1645
Actions per View	30,77	1,7	1,5	2,1	1,6	1,9	2	1,8	1,3
Bouncing Rate	-14,61	76%	82%	66%	79%	67%	64%	67%	89%
Page Views	48,48	3167	5121	2315	3061	2876	1583	1225	2133

7.9 Mailing list and social media

The Center has three main mailing-lists:

The Nexa-Fellows mailing-list is a private list connecting the core Nexa Center collaborators; it is used for various purposes, including confidential communications and to coordinate the activities of the fellows on specific projects; the list has about 43 members (Nexa Center fellows, Faculty Associates, and staff) and relatively low traffic (140 messages since May 2022 until April 2023);

The Nexa-Announce mailing-list is a low traffic list used to spread information about Nexa Center public events and publications; it is open to anybody, upon subscription, in read-only mode. The Center also uses various internal mailing-lists to connect the members of the staff and/or some sub-sets of them working on specific projects.

The Nexa mailing-list is used to inform all the fellows and friends of the Nexa Center about the events and publications of the Center, and to circulate information regarding books, reports and other materials about "Internet & Society" in general; the list is open to anybody, upon subscription, and all the members can both read and post new messages; the list has about 863 members (851 one year ago) and collected 1.914 posts from May 2022 to April 2023.

During the reporting period, the Center also increased the use of social networks such as Twitter (<https://twitter.com/nexacenter>), LinkedIn (<https://www.linkedin.com/company/3054864/admin/>), Facebook (<https://www.facebook.com/nexa.center>) and Instagram (https://www.instagram.com/nexa_center/). Below you can

find the summary of Nexa Center followers across various platforms that highlights a modest increase in total engagement. On Twitter, the Center now has 4.824 followers (last year, at the same time as the report is being compiled, the social had 4.425 followers). The total number of fans on Facebook is 2,548 (last year, at the same time as the report is

being compiled, the social had 2,508 fans). On LinkedIn, the Center now has 952 followers (last year, at the same time as the report is being compiled, the social had 580 followers). On Instagram, the Center now has 345 followers (last year, at the same time as the report is being compiled, the social had 229 followers).

Social	Statistics	AUG 2022	APR 2023	Numerical Variation	Var %
Twitter	Followers	4740	4824	84	1,77
Facebook	Followers	2538	2548	10	0,39
Linkedin	Followers	654	952	298	45,57
Instagram	Followers	223	345	122	54,71

7.10 DigitCult Journal

For sixteen years, during the second and fourth Wednesdays of the month, the Nexa Center for Internet and Society has turned into a place where people discuss and analyze topics related to digital culture. Experts of various disciplines (scientists, jurists, sociologists, philosophers, journalists, artists and start-uppers) present their research to a wide and heterogeneous audience, in order to promote public debates and the circulation of ideas. Accordingly, the new section of the DigitCult Journal, "Parole in codice" (Words in code), intends to enhance Nexa Center scientific divulgation by selecting some of the most fascinating and debated topics during the meetings and proposing them, in the form of in-depth analysis, to the readers of the magazine. This new DigitCult section has a multimedia format, and special attention is given to its online version. *Words in code* thus becomes an open window on the future, an original story about the relationship between the human being and the digital realm. Starting from the theme chosen from time to time, the Nexa Center develops five different contents, which can be taken individually as well as combined together and followed according to the four phases of the canonical Greimasian narrative scheme (Manipulation, Competence, Performance, Sanction).

Following this scheme, the elements are organized into a

structure consisting of four components. Manipulation is the first component and it deals with the wanting-to-do and having-to-do aspects. The other two components deal with the action: there is the competence part, referring to the factors required to accomplish the action (wanting-to-do, having-to-do, knowing-how-to-do, and being-able-to-do) and the performance, the actual realization of the action, made possible by the acquisition of competence. The last component, the sanction, consists in evaluating whether the action has been truly achieved and then gaining the corresponding retribution (reward or punishment).

The contents produced are then collected and published as an interactive map "linked" to the on-line version of the DigitCult magazine. The map ideally represents the city of the future where the user, navigating from place to place, has the opportunity to explore topics related to the digital culture. Among the contents realized, the scientific article - the heart and pivot of the storytelling path outlined above - is published as papers in the DigitCult Journal. Some examples are: "Opera Viva" by Alessandro Bulgini; "The (relational) art at the time of social networks" (<https://nexa.polito.it/nexacentrifiles/140-1-771-1-10-20191229.pdf>) by Mattia Plazio, Francesco Ruggiero, Roberto

Mastroianni, 31 December 2019. Starting from "Opera Viva" by Alessandro Bulgini (myhomegallery.org), which has become an emblematic example of relational art that unites social networks, performance and visual production, the article - through the dialogue between Bulgini himself and the philosopher and art critic Roberto Mastroianni - proposes to investigate the connection between performative, imaginary and social network practices in the building of a community space able to hold together virtuality and a socio-political dimension. Two other articles written by Nexa members have been published in 2021: *Sociosemiotic Recommendations Considerations on the Meaning of the Netflix Recommendation Systems*, (<https://nexa.polito.it/raccomandazioni-sociosemiotiche>) by Antonio Santangelo and Anita Botta, and *Meaning Viewing Suggestions* (<https://nexa.polito.it/meaning-viewing-suggestion>) by Guido Ferraro, Antonio Santangelo and Anita Botta.



ANNEXES

ANNEX I – NEXA PEOPLE

This annex describes the Nexa Community, composed by the Nexa Directors and Staff, the Board of Trustees and the Nexa Fellows. At the end of the annex, the Nexa Alumni are listed.

1.1 Directors

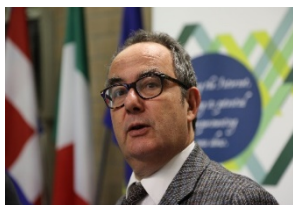
Juan Carlos De Martin (Co-Founder and Co-Director)



Juan Carlos De Martin is full professor of the Politecnico di Torino (Italy) where he teaches computer science and digital culture and where, since March 2018, he serves as Rector's Delegate for Culture and Communication. Since 2011 he has also been associated with the Berkman Klein Center for Internet & Society at Harvard University, first as Faculty Fellow and now as Faculty Associate. Between 2007 and 2011

Juan Carlos De Martin was the coordinator of COMMUNIA, the European thematic network on the digital public domain, with 50 members from Europe and overseas. In 2012 he edited, together with Melanie Dulong de Rosnay, the book *The Digital Public Domain: Foundations for an Open Culture* (OpenBookPublishers, UK), while in 2017 he published a book on the future of university in the Internet age, *Università Futura - Tra Democrazia e Bit* (Codice Edizioni, 2017). Between 2014 and 2018 De Martin served as an expert member of the Study Commission on Internet Rights established by the President of Italy's Chamber of Deputies. Juan Carlos De Martin also serves as member of the Scientific Board of the Institute of the Italian Encyclopedia Treccani. He is an op-ed contributor to the national newspaper "La Stampa" and he often acts as a commentator in Italian media.

Juan Carlos De Martin (Co-Founder and Co-Director)



Marco Ricolfi received his degree at the Faculty of Law of the University of Turin in 1974. Master of Laws, Yale Law School, 1975-1976. He is currently full professor of Intellectual Property Law at Turin Law School, where he also teaches Business Law. In 2007, Prof. Ricolfi has advised EU institutions since 1990 and was, inter alia, a member of the "High-Level Expert Group on the European Digital Libraries" created by the European Commission. He is currently a member of the

European Copyright Society and, since May 2019, President of the Advisory Board to the Italian Government on Copyright. Among his works: *Il futuro della proprietà intellettuale nella società algoritmica*, in *Giur. it., Supplemento* 2019, 10-36; *The Internet of Things and the Ages of Antitrust*, in *Concorrenza e mercato* 2017; *The new paradigm of creativity and innovation and its corollaries for the law of obligations*, in (eds) Peter Drahos-Gustavo Ghidini and Hanss Ullrich; *Kritika: Essays on Intellectual Property, Vol. I*, Edward Elgar, Cheltenham, 2015, 134-205; *Trattato dei marchi. Diritto europeo e nazionale*, Voll. 1 e 2, Giappichelli, Torino, 2015.

Maurizio Borghi (Co-Director)



Maurizio Borghi is Full Professor of Commercial Law at the Department of Law, University of Turin. Previously, he was Professor at Bournemouth University, where he directed the Center for Intellectual Property Policy & Management (CIPPM). He has taught and conducted research at various universities including Brunel University in London, the Centre for the Study of Law and Society at the University of California, Berkeley, and the ASK Centre at Bocconi

University in Milan. He has published and researched on the topics of copyright, data protection and the role of law in the digital age.

1.2 Trustees

Yochai Benkler



Yochai Benkler is the Berkman Professor of Entrepreneurial Legal Studies at Harvard, and faculty co-director of the Berkman Center for Internet and Society. Before joining the faculty at Harvard Law School, he was Joseph M. Field '55 Professor of Law at Yale. He writes about the Internet and the emergence of networked economy and society, as well as the organization of infrastructure, such as wireless communications. In the 1990s he played a role in characterizing the centrality of information commons to innovation, information production, and freedom in both its autonomy and democracy senses. In the 2000s, he worked more on the sources and economic and political significance of radically decentralized individual action and collaboration in the production of information, knowledge and culture. His work traverses a wide range of disciplines and sectors and is taught in a variety of professional schools and academic departments. In real world applications, his work has been widely discussed in both the business sector and civil society. His books include *The Wealth of Networks: How social production transforms markets and freedom* (2006), which received the Don K. Price award from the American Political Science Association for best book on science, technology, and politics, the American Sociological Association's CITASA Book Award an outstanding book related to the sociology of communications or information technology, the Donald McGannon award for best book on social and ethical relevance in communications policy research, was named best business book about the future by *Strategy & Business*, and otherwise enjoyed the gentle breath of Fortuna. In civil society, Benkler's work was recognized by the Electronic Frontier Foundation's Pioneer Award in 2007, and the Public Knowledge IP3 Award in 2006. His articles include *Overcoming Agoraphobia* (1997/98, initiating the debate over spectrum commons); *Commons as Neglected Factor of Information Production* (1998) and *Free as the Air to Common Use* (1998, characterizing the role of the commons in information production and its relation to freedom); *From Consumers to Users* (2000, characterizing the need to preserve commons as a core policy goal, across all layers of the information environment); *Coase's Penguin, or Linux and the Nature of the Firm* (characterizing peer production as a basic phenomenon of the networked economy) and *Sharing Nicely* (2002, characterizing shareable goods and explaining sharing of material resources online). His work can be freely accessed at benkler.org.

Francesca Bria



Francesca Bria is a senior expert and advisor on technology and innovation policy. She is Visiting Professor at the Institute for Innovation and Public Purpose, UCL London and Associate Professor at ESADE Business School. She is currently the Commissioner of Digital Technology and Innovation for the City of Barcelona in Spain and she is leading the DECODE project on data sovereignty in Europe. Francesca is an advisor to the European Commission on next-generation Internet and smart city policies. She has a PhD in Innovation and Entrepreneurship from Imperial College, London and a MSc on Digital Economy from University of London, Birbeck. As Senior Programme Lead at Nesta, the UK Innovation Agency, she has led the EU D-CENT project, the biggest European Project on digital democracy and digital currencies. She also led the DSI project on Digital Social Innovation in Europe, advising the EU on digital social innovation policies. She has been teaching in several universities in the UK and Italy and she has advised governments, public and private organizations and movements on technology and innovation policy, and its socio-economic impact. Francesca has been listed in the Top 50 Women in Tech by Forbes Magazine, and in the World's top 20 most influential people in digital government by Apolitical. She has been also featured in the Italian Magazine Repubblica "D", amongst the 100 Women Changing the World. Francesca Bria is an adviser for the European Commission on Future Internet and Innovation Policy. She is currently the new Commissioner of Digital Technology and Innovation for the city of Barcelona in Spain.

Mario Calderini



Mario Calderini, a Ph.D. in Economics from the University of Manchester, is a Full Professor at Politecnico di Milano, School of Management, where he teaches Social Innovation. He is the Director of Alta Scuola Politecnica and Executive Vice President of Fondazione Politecnico. He is the Director of Tiresia, the Politecnico di Milano School of Management's Research Centre for Impact Finance and Innovation. He is a member of the Scientific Advisory Board of the Minister of University Research and Innovation and a Government's Sherpa for the G7 Italian Presidency 2017. His numerous publications in highly ranked international journals cover several topics in the field of innovation and social impact finance. He has been a member of the G8 Task Force for Social Impact Investment, he chaired the Italian Advisory Board on Social Impact Finance, he is the President of the Scientific Committee of the Social Impact Agenda for Italy Association (Italy's NAB). He sits in the Italian Government's Advisory Group on Social Entrepreneurship and Impact Measurement and he contributed to promoting the social innovation agenda in Italy, launching the sector's first public consultation. He has been part of the Government's Advisory Group that drafted the new law on social entrepreneurship. He is currently a member of the Government's Task Force on Social Impact Investment. He sits on the Director's Board of the newly established Nesta Italy Foundation.

Sandra Cortesi



Sandra Cortesi is a Fellow at the Berkman Klein Center for Internet & Society at Harvard University and the Director of Youth and Media. She is responsible for coordinating the Youth and Media's policy, research, and educational initiatives, and is leading the collaboration between the Berkman Klein Center and UNICEF. At Youth and Media Sandra works closely with talented young people and leads researchers in the field as they look into innovative ways to approach social challenges in the digital world. Together with Berkman Klein Center's Executive Director Urs Gasser and the Youth and Media team, she focuses on topics such as inequitable access, information quality, risks to safety and privacy, skills and digital literacy, and spaces for participation, civic engagement, and innovation. Sandra works in close collaboration with the Digital Asia Hub and FIR

Luca De Biase



Luca De Biase is a journalist and writer. He is the founder and chief editor of Nòva, the science and technology crossplatform section at Il Sole 24 Ore. He is the president of the scientific committee at MediaCivici Association, which is meant to research and help improve the information ecosystem emerging in social media. He is author of Homo Pluralis, Economia della felicità, Il mago d'ebiz and In nome del popolo mondiale. He blogs at blog.debiase.com and lucadebiase.nova100.ilsole24ore.com. He edited with Giorgio Meletti "Bidone.com". He contributed to the project and implementation of various initiatives, such as Skillpass, ScienceXpress, I nonni raccontano, EquiLiber, Reporters Online. He teaches Knowledge Management at Pisa University, journalism at Padova University and Sissa University. The Media Ecology Association awarded Luca with The James W. Carey Award for Outstanding Media Ecology Journalism 2016.

Josef Drexl



Professor Dr. Josef Drexl, LL.M., graduated from the University of Munich and holds a Ph.D. degree (1990) and a habilitation degree of the same University, in addition to an LL.M. degree from the University of California at Berkeley. Josef Drexl worked as a law professor at the Universities of Würzburg and Munich from 1997 to 2006; he continues to be an honorary professor at the University of Munich. Since 2002 he has been a director of the Max Planck Institute for Innovation and Competition in Munich. In 2003, Professor Drexl was elected the first chair of the Academic Society for Competition Law (ASCOLA). As the Chair of the Managing Board of the Munich Intellectual Property Law Center (MIPLC) he is responsible for an internationally renowned LL.M. program in IP. He acted as a visiting professor at Oxford University, LUISS University (Rome) and New York University. He regularly teaches in the LL.M. program in EU law at the University of Paris 2 Panthéon-Assas. Professor Drexl is an expert in international and European competition law, intellectual property law, consumer law and WTO law.

Brett Frischmann



Brett Frischmann joins Villanova as The Charles Widger Endowed University Professor in Law, Business and Economics, effective August 1, 2017. In this new role, Professor Frischmann will promote cross-campus research, programming and collaboration; foster high-visibility academic pursuits at the national and international levels; have the ability to teach across the University; and position Villanova as a thought leader and innovator at the intersection of law, business and economics. A renowned scholar in intellectual property and Internet law, Professor Frischmann comes to Villanova from Cardozo Law School at Yeshiva University, where he was director of the Cardozo Intellectual Property and Information Law Program (2011-2016) and a Professor of Law. He is an affiliated scholar of the Center for Internet and Society at Stanford Law School, and a trustee for the Nexa Center for Internet & Society, Polytechnic University of Turin. Professor Frischmann most recently served as the Microsoft Visiting Professor of Information and Technology Policy at Princeton University's Center for Information and Technology Policy. Professor Frischmann's work has appeared in leading scholarly publications, including *Columbia Law Review*, *Cornell Law Review*, *Journal of Institutional Economics*, *Journal of Economic Perspectives*, *University of Chicago Law Review*, and *Review of Law and Economics*, among others. His forthcoming book co-authored with philosopher Evan Selinger, *Being Human in the 21st Century: How Social and Technological Tools are Reshaping Humanity* (Cambridge University Press), will examine techno-social engineering of humans, various 'creep' phenomena and modern techno-driven Taylorism. Professor Frischmann's books on the relationships between infrastructural resources, governance, commons and spillovers include *Infrastructure: The Social Value of Shared Resources* (Oxford University Press, 2012); *Governing Knowledge Commons* (Oxford University Press, 2014, with Michael Madison and Katherine Strandburg); and *Governing Medical Knowledge Commons* (Cambridge University Press, forthcoming 2017, with Michael Madison and Katherine Strandburg). Prior to his appointment at Cardozo Law, Professor Frischmann was on the faculty of the Loyola University Chicago, School of Law from 2002 to 2010. He also has served as a visiting professor at numerous institutions, including Columbia Law School, Cornell Law School, Duke Law School, Fordham University School of Law and Syracuse University College of Law.

Jean-Claude Guédon



Prof. Jean-Claude Guédon began his career at Glendon College (York University) in Toronto, Ontario in 1970 and has been a professor at the Université de Montréal since 1973, first in the Institut d'histoire et de sociopolitique des sciences, and, since 1987, in the Département de littérature comparée. He is a long-time member of the Internet Society serving as co-chair of the program committee in 1996, 1998 and 2000, and member of the same committee in 1997, 1999 and 2002. In 1991, with Bill Readings and Walter Moser, he launched the first electronic scholarly journal in Canada: *Surfaces*. Between 1998 and 2003, he was Chair of the Advisory Board for CNSLP (Canadian National Site Licence Project, now known as CRKN

(Canadian Research Knowledge network). From 2002 until 2006, he was a member of OSI's Information Program sub-board. Between 2003 and 2007, he was a member of the Advisory Board of eIFL (Electronic Information for Libraries). In 2006 he was elected (until November 2008) Vice-President of the Canadian Society for the Humanities and Social Sciences. He has advised numerous governmental bodies, including the Ministère de la Recherche (France) for their e-publication project in the humanities and the social sciences; the Agence de la francophonie for matters pertaining to new technologies; the Quebec Minister of Communication in charge of the information highway; and the Quebec Ministry of education for the integration of the new technologies into the curriculum. He regularly acts as expert for the European Commission. He is also on the editorial board of several journals, and his three books are all available in Italian. He is on the advisory board of Redalyc, an open access publishing platform based in Mexico, and he was invited to write an analysis for the 15th anniversary of the Budapest Open Access Initiative: "Open Access: Toward the Internet of the Mind". During his visit at the Nexa Center, prof. Guédon interacted with the staff and the fellows of the Nexa Center and worked on a research whose findings were presented during the 31st NEXA Wednesday (May 11, 2011): Toward a distributed mass digitization.

Anna Masera



Anna Masera is an Italian journalist and Public Editor at La Stampa. She is also Director of the Labs and the Newspaper "Futura" of the Giorgio Bocca Journalism Master at the University of Turin. From 2014 to 2015, Anna was Head of Press and Communication Manager of the Chamber of Deputies. Anna Masera graduated in History at Yale in 1983. In 1984 she was awarded a master's degree in journalism from the Columbia University. In 1986 she started to work as journalist for "Italia Oggi", an Italian daily newspaper. Then

she worked for the press agency Reuters and later for Mondadori, writing for two monthly magazines: "Fortune Italia" and "Espansione". In the meantime, she was also a consultant for the talk show "Milano, Italia" of the Italian public broadcaster. She started to work for Panorama "life and style" section in 1994 when Internet started to gain widespread diffusion. Since then she is following the development of new media: first she founded "Panorama Web", then she was hired by "La Stampa" in 1999 to launch their website.

Angelo Raffaele Meo



1961-1969 Assistant Professor of Electrical Engineering at Politecnico di Torino. 1970- Full Professor of Computer Science at Politecnico di Torino. 1970-1999 head of "Centro per l'Elaborazione Numerale dei Segnali" CNR. 1979-1985 director of the "Progetto Finalizzato Informatica", CNR. 1991-1996 scientific director of "Centro di Supercalcolo Piemonte". He has published more than one hundred papers dealing with computer science. In particular, he investigated switching theory, hardware design, signal

processing, speech analysis and synthesis, and pattern recognition. He has coordinated many academic and industrial national research projects on computer science. He was president of the Academy of Sciences of Torino. In 2002 he was called by the Italian Minister of Technology to preside at a Commission entrusted with the task of promoting open source in the Italian Public Administration.

Charles Nesson



Charles Rothwell Nesson is the William F. Weld Professor of Law at Harvard Law School and the founder of the Berkman Center for Internet & Society and of the Global Poker Strategic Thinking Society. He is author of Evidence, with Murray and Green, and has participated in several cases before the U.S. Supreme Court, including Daubert v. Merrell Dow Pharmaceuticals. In 1971, Nesson defended Daniel Ellsberg in the Pentagon Papers case. He was co-counsel for the plaintiffs in the case against W.R. Grace that was

made into the film A Civil Action. Nesson attended Harvard College as an undergraduate, and then Harvard Law School where he joined the list of only a handful of people in history to have graduated summa cum laude. Nesson was a law clerk to Justice John Marshall Harlan II on the United States

Supreme Court, 1965 term. He then worked as a special assistant in the Department of Justice Civil Rights Division. His first case, *White v. Crook*, made race and gender-based jury selection in Alabama unconstitutional. Nesson joined the Harvard Law School faculty in 1966, and was tenured in 1969. He is "currently leading a project to reify university as a meta player in cyberspace, to legitimize and teach poker and the value of strategic poker thinking, and to advance restorative justice in Jamaica". In 2006 he taught *CyberOne: Law in the Court of Public Opinion* with Rebecca Nesson and Gene Koo. He teaches courses in the law and practice of Evidence (how to prove the "truth"), Trials in Second Life, and a reading group with Fern Nesson on Freedom.

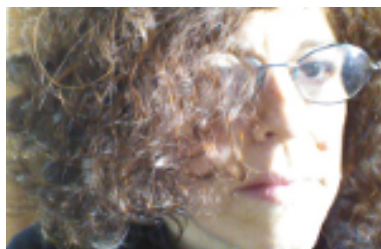
Ugo Pagallo



Ugo Pagallo is a former lawyer and current professor of Jurisprudence at the Department of Law, University of Turin (Italy), member of the Expert Group set up by the EU Commission on liability and new technology/new technologies formation, he is also working with the European Institute for Science, Media, and Democracy (Atomium), in order to set up AI4People, the first global forum in Europe on the Social Impacts of Artificial Intelligence. He is also collaborating with the IEEE Global Initiative for Ethical Considerations in AI and Autonomous

Systems; the European Science Foundation of Strasbourg, France; and the Joint International Doctoral (PhD) degree in Law, Science and Technology, part of the EU's Erasmus Mundus Joint Doctorates (EMJDs). Author of eleven monographs and numerous essays in scholarly journals and book chapters, his main interests are Artificial Intelligence & law, network and legal theory, and information technology law (specially data protection law and copyright). The Japanese edition of his book on *The Laws of Robots* is available since Spring 2018.

Maria Chiara Pievatolo



Maria Chiara Pievatolo is professor of political philosophy in the Department of Political Sciences at the University of Pisa. She has been theorizing and practicing the open access publishing in the field of humanities since the 90s of the last century, first as political philosophy editor of the *Sito Web Italiano per la Filosofia* (SWIF) founded by Luciano Floridi, and then as curator and founder of the "Bollettino telematico di filosofia politica", of the "Giuliano Marini" Archive, and of the book series *Methexis*. She is also a member of

the open access Crui committee and one of the founding members of the Aisa (Associazione italiana per la promozione della scienza aperta). Since the end of 2014 she has been one of the associate editors of the Directory of the Open Access Journals (Lund University). Since 2015, she has been the vice-president of the Associazione Italiana per la promozione della scienza aperta. A detailed list of her works, many of which hypertextual, experimental, openly accessible, can be found here: https://unimap.unipi.it/cercapersone/dettaglio.php?ri=5829&template=dett_publicazioni.tpl

Stefano Quintarelli



Stefano Quintarelli is a serial entrepreneur (and prolific blogger), who pioneered the commercial development of the Internet in Italy, and former professor of information systems, network services and security. He was a Member of Parliament in the XVII legislature and a member of the High Level Expert Group on Artificial Intelligence of the European Commission. He graduated in IT science at the University of Milan. In 1989 he founded M.I.N.E.R.S. (Milano Network Researchers and Students), the student telecom association that

developed the first e-mail independent system in Italy. In 1994, he was one of the founders of [I.NET](#), the first commercial ISP in Italy. He was one of the founding members of: CLUSIT, Italian association for IT security; AIPSI, Italian association of professionals of IT security (Italian division of ISSA.org). He has been a supporter of civic IT backing the first civic networks in Italy (e.g. RCM the civic network of Milan and ONDE - Online Desenzano). He is a supporter of network neutrality and knowledge sharing and he sustained since the beginning the activities of "Condividi la Conoscenza", the conferences

organized by Sen. Fiorello Cortiana and in 2005 he introduced in Italy the network neutrality topic in a congress with Lawrence Lessig and on other occasions. He is the author of many books and papers on the Internet, published on the most important Italian newspapers. He chaired the Italian ISP association (AIIP) till January 2007. He has been awarded by "Corriere della Sera-Economia" as one of the 30 most innovative Italian entrepreneurs.

He is Chairman of the Steering Committee of the Agenzia per l'Italia Digitale, member of the Steering Committee of the Sustainable Development Solutions Network (UNSDSN), Chairman of the Advisory Group on Advanced Technologies for Trade and Transport for UN/CEFACT, and member of the Board of Directors of the Copernicani. He sits on the Scientific Committee of Bollati and Boringhieri for which he published "Capitalismo Immateriale" (Canova Prize for Economic Dissemination) and "Intelligenza Artificiale".

Bruce Sterling



Bruce Sterling, author, journalist, editor, and critic, was born in 1954. Best known for his ten science fiction novels, he also writes short stories, book reviews, design criticism, opinion columns, and introductions for books ranging from Ernst Juenger to Jules Verne. His nonfiction works include "The Hacker Crackdown: Law and Disorder on the Electronic Frontier" (1992), "Tomorrow Now: Envisioning the Next Fifty Years" (2003), and "Shaping Things" (2005). He is a contributing editor of WIRED magazine and writes a weblog. During 2005, he was the "Visionary in Residence" at Art Center College of Design in Pasadena. In 2008 he was the Guest Curator for the Share Festival of Digital Art and Culture in Torino, Italy, and the Visionary in Residence at the Sandberg Instituut in Amsterdam. In 2011 he returned to Art Center as "Visionary in Residence" to run a special project on Augmented Reality. He has appeared in ABC's Nightline, BBC's The Late Show, CBC's Morningside, on MTV and TechTV, and in Time, Newsweek, The Wall Street Journal, the New York Times, Fortune, Nature, I.D., Metropolis, Technology Review, Der Spiegel, La Stampa, La Repubblica, and many other venues

Jasmina Tesanovic



Jasmina Tesanovic is a feminist and political activist (Women in Black; CodePink) and a writer (15 books), journalist, musician, translator and film director. In 1978 she promoted the first feminist conference in Eastern Europe, "Drug-ca Zena" (Belgrade). She designs and creates the first feminist publishing house in the Balkans, "Feminist 94". She is the author of "Diary of a Political Idiot", translated in 12 languages: a real time war diary written during the 1999 conflict in Kosovo. Since then she has been publishing her works on blogs and other media, always connected to the Internet.

One of the founders of Casa Jasmina, smart home of the future, in Turin, author of the manifesto and movement Internet of Women Things. She writes in three languages and lives between Turin, Belgrade, Austin and Ibiza.

1.3 Fellows

Antonio Casilli – Faculty Fellow



Antonio Casilli is an associate professor at the Paris Institute of Technology (ParisTech) and a research fellow at the School for Advanced Studies in Social Sciences (EHESS). His research foci are digital technologies and human rights: privacy, free speech, health, and workers' rights. He is the co-founder of the European Network on Digital Labour (ENDL). Among his most recent books: *The 'Pro-Ana' Phenomemon* [Le phénomène 'pro-ana'], Presses des Mines, 2016; *What is digital labor?* [Qu'est-ce que le digital labor?], INA Editions, 2015; *Against the Hypothesis of the End of Privacy*, Springer, 2014; *Digital Relationships* [Les liaisons numériques], Editions du Seuil, 2010. His work is regularly featured in international media (Le Monde, BBC, Repubblica, CNN, La Vanguardia, Hankyoreh Shinmun, Kathimerini).

Alessandro Cogo – Faculty Fellow



Alessandro Enrico Cogo (PhD, Pavia-Munich) is an associate professor of business law at the University of Turin, where he serves as scientific director of the LLM in intellectual property jointly offered by the same University and the World Intellectual Property Organization, with the support of the International Training Center of the International Labor Organization. Author of numerous scientific contributions on copyright, trademarks, and patents, he sits in the board of directors of AIDA (Annali Italiani di Diritto d'Autore, della cultura e dello spettacolo) and in the editorial committees of *Giurisprudenza Italiana* (business law section) and *GADI* (Giurisprudenza Annotata di Diritto Industriale). Member of ALAI and AIPPI, he sits in the international standing committee on copyright of the latter. Partner at CVPM Legal, he practices in the field of intellectual property law.

Enrico Donaggio – Faculty Fellow



Enrico Donaggio teaches Philosophy and practice of interdisciplinarity and is the Scientific Director of the Institute for Advanced Study of Aix-Marseille University. He is author of *Una sobria inquietudine. Karl Löwith e la filosofia* (Feltrinelli, 2004; translated in French, Spanish and German), *Che male c'è. Indifferenza e atrocità tra Auschwitz e i nostri giorni* (L'ancora del Mediterraneo, 2005), *A giusta distanza. Immaginare e ricordare la Shoah* (L'ancora del Mediterraneo, 2010), *Direi di no. Desideri di migliori libertà* (Feltrinelli, 2016). He has edited *La Scuola di Francoforte. La storia e i testi* (Einaudi, 2005), K. Marx, *Capitalismo, istruzioni per l'uso* (Feltrinelli, 2007), *C'è ben altro. Criticare il capitalismo oggi* (Mimesis, 2014), K. Marx - F. Engels, *Manifesto del partito comunista* (Feltrinelli, 2017), K. Marx, *Manoscritti economico-filosofici del 1844* (Feltrinelli, 2018), H. M. Enzensberger, *Colloqui con Marx e Engels* (Feltrinelli, 2019), F. Engels, *La condizione della classe operaia in Inghilterra* (Feltrinelli, 2020), C. Dejours, *L'ingranaggio siamo noi. Lavoro e banalizzazione dell'ingiustizia sociale* (Mimesis, 2021).

Massimo Durante – Faculty Fellow



Massimo Durante is a Professor in Philosophy of Law and Legal Informatics at the Department of Law, University of Turin. He holds a Ph.D. in Philosophy of Law, Department of Law, University of Turin, and a Ph.D. in Moral Philosophy, Faculty of Philosophy, Paris IV Sorbonne. He is vice-coordinator of the Joint International Doctoral (Phd) degree in "Law, Science, and Technology". Member of the Scientific Board of the Master in Data Protection Law at the Department of Law, University of Turin. Author of several books, he has widely published papers in Italian, English and French. His main

interests are law and technology, information ethics, digital governance, privacy and data protection law, AI, algorithms & law. His last book, *Computational Power. The Impact of ICT on Law, Society and Knowledge*, has been published by Routledge, 2021.

Giovanni Leghissa – Faculty Fellow



Giovanni Leghissa (Trieste, 1964) is Associate Professor at the Department of Philosophy and Educational Sciences at the Università di Torino. He is editor of "aut aut", and director of the online journal of philosophy "Philosophy Kitchen". He has taught philosophy at the Universities of Vienna, Trieste, and at the Hochschule für Gestaltung di Karlsruhe. Among its publications:

Per la critica della ragione europea. Riflessioni sulla spiritualità illuminista (Mimesis, Milano 2019); (WITH G. Becchio) *The Origins of Neoliberalism* (Routledge, London 2016); *Postumani per scelta. Verso un'ecosofia dei collettivi* (Mimesis, Milano 2015); *Neoliberalismo. Un'introduzione critica* (Mimesis, Milano 2012); *Incorporare l'antico. Filologia classica e invenzione della modernità* (Mimesis, Milano 2007). He has edited, with Enrico Manera, the volume *Filosofie del mito nel Novecento* (Carocci, Roma 2015). His investigations have as their focal points: phenomenology, psychoanalysis, epistemology of economics, epistemology of the humanities (with particular reference to anthropology, history of religions, classical philology and biblical philology), the relationship between religion and modernity, philosophy of the post-human, philosophy of technology, contemporary Jewish thought, intercultural philosophy, Postcolonial and Gender Studies.

Luca Peyron – Faculty Fellow



Luca Peyron is a jurist and theologian. He directs the Pastorale Universitaria Regionale and founded and coordinates the Apostolato Digitale service, one of the first global services of the Catholic Church that deals with the relationship between digital and faith. Professor of Theology at the Università Cattolica and at the Istituto Universitario Salesiano di Torino, he holds a workshop on the spirituality of emerging technologies at the Università di Torino. His field of study

and pastoral care is specifically the relationship between the digital, faith and society. He collaborates regularly with several journals and portals, most recently publishing "Incarnazione Digitale" (Elledici, 2019).

Mauro Alovisio – Fellow



Mauro Alovisio graduated in Law at the University of Turin, Italy. He has specialized in Data Protection and New Technologies Law. Currently he is working at the Legal Office of the University of Turin. During his professional activity he dealt with the privacy and the reorganization of the public administration through the use of the new technologies. Mauro is author of scientific articles published in Italian journals and co-author on law books. He is the President of "Centro Studi di Informatica Giuridica" and he is a member of the

"Commissione Informatica del Consiglio dell'Ordine degli Avvocati di Torino". As part of his Nexa fellowship, Mauro will focus on research topics related to personal data in the EVPSI project and within the implementation of pilots in the Open-DAI project, also touching other issues related to public administrations in digital environment.

Eleonora Bassi – Fellow



Eleonora Bassi is a researcher and consultant with a legal and philosophical background. She graduated in Law and holds a Ph.D. in Philosophy of Law and Legal Theory (University of Torino). She worked at the Law School of the University of Torino (2008-2012) and at the Computer Science Department of the University of Trento (2012-2015). Her research fields are legal theory and political philosophy, privacy law, data governance, European IT policy, and aviation law. She is Editor of the book series

"Tecnologie emergenti e diritto" (Mimesis editore), and is External Fellow of the "Ethics + Emerging Sciences Group" currently based at the California Polytechnic State University."

Lorenzo Benussi – Founding Fellow



Lorenzo Benussi, master's degree in Communication Sciences and Ph.D. in Economics of Innovation, is advisor for digital policy at the TOP-IX Consortium where he develops projects and policies to support digital innovation. He was counsellor of the Italian Minister of Education and Research and member of task forces to promote online engagement and e-participation at the Ministry of Reforms and the Ministry of Foreign Affairs. Lorenzo is also member of the scientific board of Opencoesione, open data project of the Ministry

of Treasury, and member of the board for innovation of the IREN Group. Lorenzo is fellow of the Nexa Center for Internet & Society at the Polytechnic of Turin where he conducts research on the economics of innovation, strategic management and economics of knowledge. Lorenzo main interest both as professional and researcher is the evolution of innovation models due to the pervasive diffusion of digital networks.

Enrico Bertacchini – Founding Fellow



Dr. Enrico Bertacchini is associate professor at the Department of Economics and Statistics "S. Cogneetti De Martiis", University of Turin, where he teaches Cultural Industries & Global Markets and Governance of Economic Processes. He graduated in Economics at the University of Turin and holds a Master in Economics from CORIPE-Collegio Carlo Alberto and a Ph.D. in Institutions, Economics and Law from the Universities of Turin and Gent.

His main interests within the "Internet & Society" field concern Internet as an infrastructure for the production of and access to information goods, in particular digitized cultural resources. He has multidisciplinary competences concerning the economics of culture and the economic analysis of intellectual property, with a focus on commons-based models for the production of and access to information goods.

His works has been published, among others, in the Journal of Cultural Economics, International Journal of Cultural Policy, International Journal of Arts Management, Review of Law and Economics, Ecological Economics and Regional Studies..

Marco Ciurcina – Founding Fellow



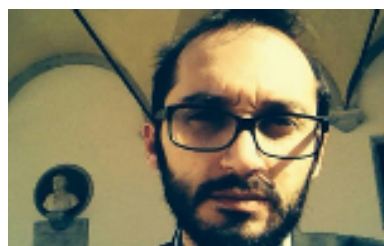
Italian lawyer, working in the field of commercial and contractual law, Information Technology law, Copyright, Patent, Trademark, and Privacy law, particularly, with special focus on free software licenses, open content and open data. He teaches "Law and ethics of communication" at the Polytechnic University of Turin. Free software and digital fundamental rights activist.

Carlo Blengino – Fellow

Carlo Blengino lives in Turin and is a lawyer and a partner of the legal firm “Studio Legale Catalano Penalisti Associati”. Carlo deals exclusively with criminal law cases, with special reference to professional liabilities, economics criminal laws, intellectual property rights, ICT law, privacy and data protection. Since the early '90s he faced before the Courts main legal issues related to copyright, cybercrime, and ISP liability; among his many defenses, the one in the well-known sentence on downloading (Cass.149/07), the defense of many users in the Peppermint case, and on behalf of Google Inc., he was the defense lawyer of the Google Global Privacy Counsel in the Google vs. Vividown leading case. He is fellow of NEXA Center for Internet & Society at the Polytechnic University of Turin. He writes for some on-line journals and for scientific magazines and He has published contributions for several publishers: Giappichelli, UTET Giuridica, Egea ed Aracne. He has a personal blog on ilPost.it.

Nicola Bottero – Founding Fellow

Nicola Bottero is a practicing lawyer with a degree in Law from the University of Turin with a thesis on comparative law. He also graduated in the Intellectual property Specialization Course jointly organized by the University of Turin and the WIPO Academy. On top of practicing private law, industrial law and commercial law, works with the Chairs of Commercial and Industrial Law at the Law Faculty of the Universities of Turin. He also teaches industrial law within some master degrees. He has been a member of the working group of Creative Commons Italy since its beginnings in 2003.

Fabio Chiusi – Fellow

Fabio Chiusi is a freelance journalist (Wired, L'Espresso, Repubblica) and blogger (ilNichilista, Chiusi nella rete) who regularly writes about Internet censorship, surveillance and the complex relationship between digital technologies, politics and society. He holds a MSc in Philosophy of Science from the London School of Economics. He is the author of *Critica della democrazia digitale. La politica 2.0 alla prova dei fatti* (Codice Edizioni).

Deborah De Angelis – Founding Fellow

Deborah De Angelis is an attorney-at-law based in Rome, Italy. She is currently the representative and legal lead of the Italian Chapter in the Creative Commons Global Network since its constitution in 2018. Deborah is a legal expert in copyright law, entertainment law and new technologies. She also worked as a legal advisor on copyright law to the previous Italian Minister of Cultural Heritage. Deborah carries out teaching and training activities, has organized numerous conferences and events in copyright and entertainment law, and authored several publications. Since 2004, she has been a fellow of the NEXA Center for the Internet & Society. She is a component of the working group Digital Cultural Heritage ICOM ITALIA - 2020. Since July 2021, she is currently the regional delegate for Italy for the project on the right to research in the field of the International copyright law of the PIJIP group of the American University, Washington College of Law.

Giulio De Petra – Fellow



Giulio De Petra received his degree in Economics from University of Siena, Italy. He worked in the service organization in BNL (Banca Nazionale del Lavoro), one of the top Italian banks, as expert in software design methodologies and in database administration. Later, he moved to the consulting division of IPACRI (Istituto per l'Automazione della Casse di Risparmio Italiane), where he was in charge of the research activities and projects. He has been senior consultant for the RSO Institute and it was for several years ICT advisor for the mayor of the city of Rome. Later, he became executive manager in AIPA (Autorità per l'Informatica nella Pubblica Amministrazione) - public local administration division. After he became director general for eGovernment at the Prime Minister's department of Public Administration where he promoted the first national plan for eGovernment. Afterwards he became general manager in CNIPA (Centro Nazionale per l'Innovazione della Pubblica Amministrazione) leading as a director the public local administration department. Giulio De Petra then became general executive manager for Innovation before for the Autonomous Region of Sardinia and later for the Calabria Region. It has been member of the Prime Minister's Committee for the Statistical Information Assurance and he was vice president of ASSINTER (National association of the regional public administration companies working in the ICT field). Since 2010 he has been working at Informatica Trentina, as executive manager. Giulio De Petra founded and supported many national associations working on political and social issues of technological innovation, including "ICT for Democracy", "Network", "The NetCentury – for a Free Knowledge Society".

Giuseppe Futia – Fellow

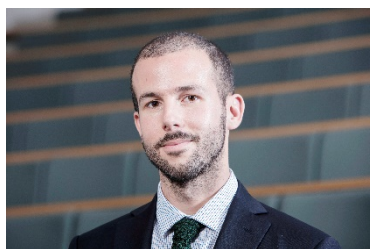


Giuseppe Futia is currently Senior Data Scientist at GraphAware Srl. His R&D activity covers different topics, including Graph Representation Learning, Natural Language Processing, and Recommendation Systems. He holds a Ph.D. in Computer and Control Engineering at the Politecnico di Torino (Italy) with the supervision of Prof. Juan Carlos De Martin. For several years, he was the assistant of Prof. De Martin within the Digital Revolution course at Politecnico. Before joining GraphAware, he has been Full Stack Developer at Synapta Srl. In his professional career, Giuseppe was also Communication Manager and Research Fellow of the Nexa Center for Internet & Society and a freelance journalist for La Stampa newspaper.

Giovanni B. Gallus – Fellow



Giovanni Battista Gallus is a lawyer, admitted before the Supreme Court, ISO 27001:2005 Certified Lead Auditor, founding member of the law firm "GM-LEX Studio Legale", and member of Array.eu, a network of IT Lawyers. He holds an LL.M. granted by the University of London - UCL, and a PhD by the University of Molise. He practices mainly in the field of Criminal Law, ICT Law, Copyright and Data Protection Law, Drone Law. He is teaching assistant in Information Technology Law and Advanced Information Technology Law at the School of Law of the University of Milan. Former President of the Italian Association of Cyberlawyers ("Circolo dei Giuristi Telematici"), and fellow of the Hermes Center for Transparency and Digital Human Rights, and a passionate user and supporter of Free Software. Author and co-author of several books and articles, among which "Contenuti aperti, beni comuni" (McGraw-Hill, 2009) and "The new Information Technology Crimes" (Giappichelli, 2009).

Guido Noto La Diega – Fellow

Guido Noto La Diega is a Scotland-based Sicilian academic and practitioner who has been working on law & innovation for over a decade in Italy, the UK, Switzerland, Germany, Brazil, and Russia. He is the author of the reference book *Internet of Things and the Law: Legal Strategies for Consumer-Centric Smart Technologies* (Routledge 2022).

Noto La Diega is Associate Professor of Intellectual Property and Privacy Law at the University of Stirling, where he directs the Scottish Law and Innovation Network (SCOTLIN) funded by The Royal Society of Edinburgh, chairs the Equality, Diversity, and Inclusion Committee, teaches Media Law and Intellectual Property Law, and carries out research at the Center for Research on Information, Surveillance, and Privacy (CRISP). His main expertise is in Internet of Things (IoT), Artificial Intelligence, cloud computing, robotics, and blockchain (including smart contracts and NFTs). Holder of a PhD in Private Law (Unipa), a Postdoc in Cloud Computing Law (QMUL), and an HEA Fellowship, Noto La Diega has a strong publication and bidding record and his works on Information Technology Law and Intellectual Property have been cited by the EU Court of Justice's Advocate General, the House of Lords, the Council of Europe, and the World Economic Forum, amongst others. In parallel to his commitments at Stirling and Nexa, Noto La Diega is a member of the European Commission's Expert Group on AI and Data in Education and Training; Visiting Professor at the University of Macerata; and Co-Convenor of the Open Section of the Society of Legal Scholars, the oldest and largest society of law academics in the UK and the Republic of Ireland.

Alongside research and teaching, Noto La Diega is a qualified lawyer called to the Bar of Italy in 2013 (non-practising) and consultant for public bodies and SMEs in matters of data protection, IP, ethics, and cyberlaw. He was part of the team who carried out "The law of Service Robots" collaboration between TIM's JOL CRAB and the Nexa Center for Internet and Society. He is currently leading the half-a-million research project "From Smart Technologies to Smart Consumer Laws: Comparative Perspectives from Germany and the United Kingdom" funded by the research councils of the UK (AHRC) and Germany (DfG). He is currently working on data sustainability in the Fourth Industrial Revolution; empirical research in the platformisation of education; and the commons in the context of the IoT.

Stefano Leucci – Fellow

Stefano Leucci is a lawyer working in the field of data protection and artificial intelligence. He complemented his legal background with IT skills and foresight capabilities. Stefano has a diversified experience both in private and public organizations. Twitter: [@stefanoleucci](https://twitter.com/stefanoleucci)

Federico Morando – Fellow

Federico is an economist, with interdisciplinary research interests focused on the intersection between law, economics and technology. His research activity mainly concerns models of production and sharing of digital contents, with a focus on linked (open) data. He also taught intellectual property and competition law at Bocconi University in Milan, and he lectures at the Politecnico di Torino and at the [WIPO LL.M. in Intellectual Property](#). He has an undergraduate degree in Economics from Bocconi Univ.

and a master's degree in Economic theory and econometrics from the Univ. of Toulouse. He holds a [Ph.D. in Institutions, Economics and Law](#) from the [Univ. of Turin and Ghent](#) with a dissertation about software interoperability. Federico joined the working group of the Nexa Center in 2006 at the beginning of its first year of formal activity. From Dec. 2012, he leads the Creative Commons Italy project and he is a member of the Open Team of Regione Piemonte that launched and steers the development of the first Italian open government data portal. From 2008 to 2012, in his position as the

first Managing Director of the Center, he worked closely with the Directors to define staff and project goals and to coordinate the Center's fellows. From 2013 to 2015 he served as Director of Research and Policy of the Nexa Center, focusing on the coordination of the cross-disciplinary research activities of the Center and on the related policy support actions. At the end of 2015 Federico left the staff of the Center to become a co-founder and the CEO of [Synapta](#), an innovative start-up specializing in linked data and the first spin-off of the Nexa Center. He continues to serve as a fellow of the Center and as the public lead of CC Italia.

Fabio Nascimbeni – Fellow



Fabio Nascimbeni, an economist with a PhD on Information and Knowledge Society, works as Assistant Professor in the Universidad Internacional de La Rioja (UNIR) in Spain, is a fellow at the Centro de Estudios sobre Tecnologia e Sociedade of the University of Sao Paulo (USP) in Brazil and a Senior Fellow of the European Distance and eLearning Network (EDEN). He has been active in the field of learning innovation and ICT for learning since 1998, working across Europe as well as in Latin America, the Caribbean, the South

Francesco Ruggiero – Fellow



In Nexa Center, he was in charge of communication and press office from 2016 to 2019. More specifically, his main responsibilities consisted in keeping contact with media and following the Nexa Center's image.

Monica A. Senior – Fellow



(Medialaws.eu, ictsecuritymagazine.com, AgendaDigitale.eu), scientific journals and law textbooks (edited by Egea, Giappichelli, Springer, UTET Giuridica and Aracne publishing houses).

Massimo Travostino – Founding Fellow



Massimo Travostino graduated in law from University of Turin (1993) and has a post-graduate degree in international and comparative law (1996). He is a practicing lawyer at Studio Legale Pecoraro-Travostino and assists public entities and private companies in commercial and contract law, with a focus on intellectual property/information technology and telecommunication sectors. He carries out regular teaching activity and is author of articles and essays.

Giuseppe Vaciago – Fellow

Giuseppe Vaciago has been a lawyer of the Milan Bar since 2002 and he is currently a partner of R&P Legal Firm. For the last 10 years his primary focus has been IT Law with a focus on cyber crime. He has assisted many national and international IT companies. Academically, he received his Ph.D. on Digital Forensics from Università di Milano and he is a Professor at Insubria University (Varese and Como) where he holds a course on IT law. He recently attended Fordham Law School and Stanford Law School as a Visiting Scholar to expand his studies in his own particular research area. Giuseppe Vaciago is the author of many publications on cybercrime, including both scientific journals and textbooks, which have been adopted by the University where he teaches. He has also delivered many lectures and presentations in both Italy and abroad. He is fellow at the Cybercrime Institute of Koln and member of the Editorial Board of Journal of Digital Investigation. As part of his Nexa fellowship, Giuseppe will propose research topics related to digital forensics and fundamental rights from an "Internet & Society" perspective and big data and social control.

1.4 Faculty Associates

Simone Arcagni – Faculty Associate



Simone Arcagni is Professor at the University of Palermo. He is a scholar, consultant, curator and disseminator of new media and new technologies. He collaborates with «Nòva-Il Sole24Ore», «Repubblica», «FilmTV», «Tascabile», «Segnocinema», «Che Fare», and other magazines and newspapers; he is also the author of *Digital World*, a Rai Scuola programme. He runs a blog on the "Nòva100" website. As a scientific advisor, he has worked and continues to work for various organisations and institutes (Rai, Meet – Centro Internazionale di Cultura Digitale, Rome Videogame Lab, VRE, Invisible Studio...), and since 2021 he has also been a consultant for new media and new technologies for the Museo Nazionale del Cinema in Turin and scientific advisor for ANICA's Union of Publishers and Digital Creators. Recently, as curator, he signed the exhibition *Futuri passati* (Biennale Democrazia / Polo del '900), *#FacceEmozioni* (with Donata Pesenti Campagnoni for the Museo Nazionale del Cinema), and *Cinema futuro* (Rome Videogame Lab, Rai Cinema e Cinecittà). He is also curator for Maker Faire Rome, Sottodiciotto and Letterature migranti. This year he is the Scientific Advisor of the Festival dell'Innovazione e della Scienza di Settimo Torinese. Together with Daniele Rosa, he edits the 'Nautilus' series (Luiss University Press). Among his publications, *Oltre il cinema* (Kaplan) and *Screen City* (Bulzoni). For Einaudi he published: *Visioni digitali* (2016) and *L'occhio della macchina* (2018). In 2020 he published *Immersi nel futuro. La Realtà virtuale, nuova frontiera del cinema e della TV* (Palermo University Press/Rai), in 2021 *Cinema futuro. Futurologia del cinema* (Nero) and *Storytelling digitale* (Luiss University Press). His most recent publication is the editing of H.G. Wells' book, *La scoperta del futuro* (Luiss University Press).

Marco Torchiano – Faculty Associate



Marco Torchiano is an associate professor at the Control and Computer Engineering Dept. of Politecnico di Torino, Italy; he has been post-doctoral research fellow at Norwegian University of Science and Technology (NTNU), Norway. He received an MSc and a PhD in Computer Engineering from Politecnico di Torino. He is Senior Member of the IEEE, member of the software engineering committee of UNINFO (part of ISO/IEC JTC 1), faculty fellow of the Nexa Center on Internet & Society. He is author or co-author of over 150 research papers published in international journals and conferences, of the book 'Software Development—Case studies in Java' from Addison-Wesley, and co-editor of the book 'Developing Services for the Wireless Internet' from Springer. He recently was a visiting professor at Polytechnique Montréal studying software energy consumption. His current research interests are: green software, UI testing methods, open-data quality, and software modeling notations. The methodological approach he adopts is that of empirical software engineering.

Giancarlo Frosio – Faculty Associate



Giancarlo Frosio is an Associate Professor at the Center for International Intellectual Property Studies (CEIPI), University of Strasbourg, the Director of the CEIPI Master 2 in European and International Intellectual Property Law, and the Academic Coordinator of the CEIPI Advanced Training in Artificial Intelligence and Intellectual Property Law. He is a qualified attorney with a doctoral degree (S.J.D.) in IP law from Duke Law School. Additionally, he holds an LL.M. from Duke Law School, an LL.M. in IT and Telecoms law from Strathclyde University, and a law degree from Università Cattolica of Milan.

Giancarlo is also a Non-Residential Fellow at the Center for Internet and Society at Stanford Law School. Previously—from 2013 to 2016—he was the Intermediary Liability fellow with Stanford CIS. At

Stanford CIS, Giancarlo launched the Intermediary liability research focus area of the Center, the World Intermediary Liability Map (WILMap), and the Stanford Intermediary Liability Lab (SILLab). For over eleven years now, he has been a Lecturer of the LL.M. in Intellectual Property law jointly organized by WIPO and the University of Turin, where he also served as the Deputy Director from 2010 to 2013. Giancarlo is also a Visiting Professor at the University of Turin, School of Management, a Visiting Professor and Chief Researcher at the Int'l Laboratory of IT and IP law of the Higher School of Economics of the National Research University in Moscow, and a Faculty Associate of the NEXA Research Center for Internet and Society in Turin. Since 2013, Giancarlo also serves as affiliate faculty at the Harvard CopyrightX program, where he lectures and coordinates the Turin University Affiliated Course, whose first edition he personally launched. Previously, Giancarlo served as a post-doctoral researcher at KU Leuven Center for IT & IP (CiTiP), COMMUNIA Fellow at the NEXA Center and CREATE Fellow at the University of Nottingham. As a COMMUNIA and CREATE fellow, Giancarlo drafted extensive reports on the digital public domain and open access publishing respectively. As an attorney, Giancarlo worked with the Intellectual Property & Technology Group of a prominent international law firm.

Giancarlo dedicated most of his academic career to studying the interface between technology, innovation, creativity, and intellectual property through the lens of international, European, and American law. In this context, his research has been covering a vast array of topics, including copyright law, digitization, history of creativity, public domain, open access, Internet and user based creativity, IP rights at large and IP enforcement online, Internet regulation, fundamental rights online, intermediary liability of online service providers, data protection, networked information economy, access to knowledge (A2K), identity politics, and artificial intelligence and the law. Giancarlo is the author of numerous legal articles and publications. His latest book is titled *Reconciling Copyright with Cumulative Creativity: the Third Paradigm* and was published with Edward Elgar in 2018. He is also the editor of the *Oxford Handbook of Online Intermediary Liability* published by Oxford University Press (2020).

Daniele Trincherò – Faculty Associate



Daniele Trincherò is professor at Politecnico di Torino (Dept. of Electronics and Telecommunications), where he manages the [iXem Labs](#) (which he co-founded with Riccardo Stefanelli in 2004). His research interests encompass Wireless Networks, Sensor Networks, Internet of Things, and solutions to reduce digital divide in developing countries, and in marginal areas of developed ones. He is member of the Institute of Electrical and Electronics Engineers (IEEE).

Giorgio Ventre – Faculty Associate



Giorgio Ventre is Professor of Computer Networks in the Department of Electrical and Information Engineering of the University of Napoli Federico II where he is leader of the COMICS research group on computer networking and multimedia communications. He owns a laurea degree in Electronic Engineering and a Ph.D. in Computer Engineering, both from the Federico II. From 1991 to 1993 he was with the Tenet Group at the International Computer Science Institute and the University of California at Berkeley. In 1993 he joined the University of Napoli Federico II first as an assistant professor. In 1999 Giorgio Ventre was co-founder of ITEM, the first national research laboratory of the Italian University Consortium for Informatics (CINI), and from 2004 to 2011 was President of CRIAI, an industrial research center on ICT in Napoli. He is now Director of ITEM and member of the board of CINI. He has been the principal investigator for a number of national and international research projects and in four EU-funded research projects on the Future Internet. Giorgio Ventre has co-authored more than 200 publications and he is senior member of the IEEE and of the ACM, and he is member of AICA and of IET. He is area editor for the *Computer Networks* journal, Elsevier. His researches are sponsored by the European Commission, the Italian Government and by several

national and international companies. He has also launched four start-up companies from the research activities developed in his lab.

1.5 Alumni

Philippe Aigrain – Trustee 2009-2021

Sacha Wunsch-Vincent – Trustee 2009-2021

Lucie Guibault -Trustee 2013-2021

David Post – Trustee 2009-2021

Michelangelo Pistoletto – Trustee 2009-2021

Stefano Rodotà – Trustee 2009-2017

Beatrice Balzola - Intern 2022

Antonio Casto - Intern 2021-2022

Davide Allavena - Fellow 2016-2022

Claudio Artusio - Fellow 2014-2022

Lorenzo Canova - Fellow 2017-2022

Arturo Filastò - Fellow 2015-2022

Raimondo Iemma - Fellow 2016-2022

Antonio Langiu - Fellow 2016-2022

Alessio Melandri - Fellow 2015-2022

Lara Merla - Fellow 2018-2022

Alessia Ingenito - Intern 2022

Stefano Boldi - Intern 2021-2022

Marco Conoscenti – Staff 2015-2021

Elena Beretta – Staff 2017-2021

Mattia Plazio – Staff 2017-2020

Francesco Ruggiero – Staff 2016-2019

Cosma Vergari – Intern 2020

Irene Domenicale – Intern 2019-2020

Federica Giordano – Intern 2019

Marc Perrin – Intern 2018-2019

Francesco Mecca – Intern 2018-2019

Enrico Gobbo – Intern 2018-2019

Beatrice Bolzonella – Intern 2018-2019

Claudia Guccione – Intern 2018

Simone Basso – Senior Research Fellow 2015-2019

Pasquale Pellegrino - Research Fellow 2017-2019
Urs Gasser - Trustee 2012-2019
Giovanni Arata - Fellow until 2018
Elena Pavan - Fellow until 2018
Andrea Cairola - Faculty Associate 2014-2018
Thomas Margoni - Faculty Associate 2008-2018
Emanuele Mottola - Intern 2018
Carlo Barone - Intern 2018
Leonardo Vezzani - Intern 2018
Luciano Floridi - Trustee 2013-2018
Simone Montrucchio - Intern 2018
Davide Brunello - Intern 2017
Elisa Botto - Intern 2017-2018
Marco Abrate - Intern 2017
Diego Mariani - Staff Research Fellow 2017-18
Alessandro Mantelero – Faculty Fellow 2011 - 2017
Marco Berlot – Intern 2017
Carolina Nicosia – Intern 2017
Carmine D'Amico – Intern 2016
Cristina Sappa - Fellow 2011-2016
Federico Cairo – Fellow 2012-2016
Myriam Bianco – Staff Research Fellow 2015-2016
Nicola Rustignoli – Intern 2015
Dario Chaifouroosh – Intern 2015
Alessandro Quaranta – Intern 2015
Luca Leschiutta – Staff 2007-2015
Roberta Bruno – Intern 2015
Fiorenza Oppici – Intern 2013
Alberto Segà – Staff 2013
Nadia Tecco – Staff 2012-2013
Silvia Bisi – Fellow 2010-2012
Elias Carotti – Research Fellow 2009 – 2012
Irene Cassarino – Fellow 2009-2012
Davide Bardone – Research Fellow 2009-2011

Carolina di Vonzo – Fellow 2009-2011

Corrado Druetta – Research Fellow 2009-2011

Valentin Vitkov – Fellow 2009-2011

Maria Crea – Staff 2011

Federica Cedriano – Staff 2009-2011

Antonella Giulia Pizzaleo – Research Fellow 2009-2010

Ilaria Buri – Staff 2009-2010

Anna Piccitto – Staff 2009-2010

Maria Teresa Medina Quintana – Staff 2006-2008

Andrea Glorioso – Staff 2006-2007

1.6 Staff

Antonio Santangelo – Senior Research Fellow



Antonio Santangelo is a semiotician. He is tenured Assistant Professor at the University of Turin, where he teaches Semiotics and Semiotics of television programmes. He also teaches Semiotics and philosophy of language, Textual Semiotics and New Media Languages at eCampus University. His main interest is in the field of media studies, where he works on the development of semiotics as a social science that can be used to understand and also to predict the meaning people may give to their experience of communication products and to their mutual interactions around them. In the last two years, he has been working on Artificial Intelligence and on the way, it can affect the public sphere, in particular the construction of public opinion. Because of his expertise, he worked for the Italian Institutions, as he contributed to draw up the Italian White Paper on Artificial Intelligence and Public Administration, together with the Agency for Digital Italy (Agid).

Antonio Vetrò – Senior Research Fellow



Antonio Vetrò is Assistant Professor at the Department of Control and Computer Engineering of Politecnico di Torino. He serves as Senior Research Fellow at the Nexa Center for Internet and Society. He is also senior research fellow and member of scientific board of the Italian Institute for Advanced Studies in Torino "Umberto Eco".

Antonio conducts interdisciplinary studies on the relationship between digital technologies and society: he is currently studying how to detect and mitigate discriminations of automated decision systems. He has a long experience in empirically evaluating methods for software and data quality improvement..

Selina Fenoglietto – Administrative Manager



Selina Fenoglietto joined the Nexa Center for Internet & Society in May 2009 as an administrative assistant. She holds a bachelor's degree in Economics from the University of Turin and her former experiences include the administrative management of projects funded by the European Commission, the World Bank, and the Italian Foreign Office. Since December 2010 she is the Administrative Manager of the Center.

Anita Botta – Communication Manager



Anita Botta holds a master's degree in Communication and Media Cultures in 2019 at the University of Turin. From October 2019, she oversees communication and press office at the Nexa Center, keeping contact with media and following Nexa's image on social networks.

Giovanni Garifo – IT Manager



Giovanni Garifo graduated in December 2019 in Software Engineering at the Politecnico di Torino with a master thesis titled "Deep Learning on Academic Knowledge Graphs", where he showed how advanced deep learning algorithms for graphs entities embedding and semantic web technologies can be used to empower a recommendation systems aimed at the academic community of the Politecnico. He joined the Nexa Center in January 2017 as IT Manager and Software Developer.

He developed the recommender system of Geranium, a KG-based system for academic publications. He is Co-Founder and CTO of Column Srl, a startup based in Turin that operates in the news media sector.. His main research interests are in web technologies and machine learning applied to semantic graphs.

Giacomo Conti – Project Manager



Giacomo Conti graduated in Law with a thesis on contractual liability for defective software. He works at the Nexa Center for Internet & Society supporting the researches on AI and Drones in Telecommunications (TIM projects). His research interests include laws studies concerning contemporary technologies. He is a member of the Order of Journalists of Piedmont since 2016.

Marco Rondina – Ph.D Student



Marco Rondina is a Ph.D. student at the Nexa Center, with a research project on Responsible AI, in collaboration with ClearboxAI and under the supervision of Prof. Juan Carlos De Martin and Prof. Antonio Vetrò. He holds a Master's Degree in Computer Engineering from the Polytechnic University of Turin, specialising in Data Analytics. During his studies he delved into the ethical aspects of data, algorithms and digital tools. In his dissertation entitled "Ethical Manufacturing of Datasets for Artificial

Intelligence: an Empirical Investigation into the State of Documentation Practice" he analysed the state of the art of dataset documentation.

1.7 Interns

Beatrice Balzola



Beatrice Balzola holds a Master's Degree in Law from the University of Turin. She graduated in 2021 with a thesis, supervised by Prof. Ugo Pagallo, with the title "The legal regulation of social media and political activities online: problems and perspectives". Throughout her university years, she committed not only to her studies but also to pursuing her social and political interests: she was nominated President of the LGBTQ+ Club of the University of Turin, and Student Representative for the

Department of Law of the University of Turin for two consecutive terms. English and Italian native speaker, she studied 6 months in Zheng Zhou, China in 2013, and won a 10-month Erasmus+ Scholarship from the University of Lapland, Finland in 2017. Cross-culturally savvy and fascinated by the role social media play in today's society, she is committed to studying the social ramifications of the digital revolution.

Vito Perrucci



Vito Perrucci is a 21-year-old university student originally from Matera, Basilicata. He attended 'Dante Alighieri' Scientific High School in his hometown. Currently, he is pursuing his undergraduate degree in Computer Engineering at the Polytechnic University of Turin. Vito has plans to continue his studies with a Master's degree, specializing in an application of Artificial Intelligence. However, he is still exploring different areas within AI and his specific focus is not yet clear..

ANNEX II – NEXA PUBLICATIONS

This section includes published articles, but also other products of the research by the Nexa Staff and Nexa Fellows, encompassing reports and some selected blogposts and presentations. Please, notice that the list of the Nexa Fellows publications just includes the set of contributions signaled by the Nexa Fellows themselves. All Nexa Staff members and Fellows are listed in bold type.

Publications by Nexa Staff

Peer Reviewed Articles in Journals and Magazines

Antonio Santangelo, Massimo Leone (a cura di), *Semiotica e Intelligenza Artificiale*, I Saggi di Lexia, January 2023

Mariachiara Mecati, **Marco Torchiano**, **Antonio Vetrò**, **Juan Carlos de Martin**, *Measuring Imbalance on Intersectional Protected Attributes and on Target Variable to Forecast Unfair Classifications*, IEEE ACCESS, 11:(2023), pp. 26996-27011, Mar 2023

Mariachiara Mecati, **Antonio Vetrò**, **Marco Torchiano**, *Detecting Risk of Biased Output with Balance Measures*, Journal of Data and Information Quality, Volume 14, Issue 4, Nov 2022

Peer Reviewed Articles in Conference proceedings

Mecati M., Adrignola A., **Vetrò A.**, Torchiano M., *Identifying Imbalance Thresholds in Input Data to Achieve Desired Levels of Algorithmic Fairness*, Second International Workshop on Data Science for equality, inclusion and well-being challenges (DS4EIW 2022), Osaka, Japan 17-20 Dec. 2022, Page 4700-4709.

Book Chapters

M. Ricolfi, **Alessandro A. Cogo**, *Injunctions in Patent Law*, Cambridge University Press, 2022

Publications by Nexa Fellows

Books

Enrico Donaggio, J. Rose, M. Cairo, *Travail e(s)t liberté?*, érès, 2022

Fabio Chiusi, *L'uomo che volle risolvere il futuro*, Bollato Boringhieri, 2023

Guido Noto La Diega, *Internet of Things and the Law*, Routledge, 2022

Giuseppe Vaciago, *GDPR e Marketing*, Giuffrè, 2022

Giuseppe Vaciago, Luca Luparia, *Compliance 231 2022*, Il Sole 24 Ore, 2022

Book Chapters

Simone Arcagni, *Transmedia cinema*, in Silvia Leonzi (a cura di), Transmedia Studies. Logiche e pratiche degli ecosistemi della comunicazione, Armando Editore, Roma.

Simone Arcagni, *Per una programmazione culturale (post)digitale*, in Francesco De Biase, Una città laboratorio culturale, Franco Angeli, Milano.

Simone Arcagni, *Biology as a humanistic approach*, in Freddy Paul Grunert (ed. by), HumanITies and Artificial Intelligence, Noema/European Commission, Bruxelles, 2022.

Simone Arcagni, *Rendering in corso...*, in Alexander R. Galloway, Gaming, Luca Sossella Editore, Roma, 2022.

Massimo Durante, *I gradi dell'automazione: diritto, fiducia e riflessività*, Mimesis, 2022

Massimo Durante, *Potere computazionale: dalle informazioni ai dati*, Mimesis, 2022

Massimo Durante, Floridi L., *A legal principles-based framework for AI liability regulation*, Springer, 2022

Massimo Durante, *Potere computazionale e società algoritmica*, Loescher, 2022

Monica A. Senior, Ugo Pagallo Massimo Durante, *La politica dei dati. Il governo delle nuove tecnologie tra diritto, economia e società*, Mimesis, 2022

Guido Noto La Diega, *I beni comuni nell'era della rimaterializzazione. L'Internet delle Cose fra apertura e resistenza collettiva*, Ragion Pratica, 2022

Luca Peyron, *Intelligenze artificiali e aumentate. Elementi di economia e management*, Marco Pironti (Curatore), EGEA, 2022

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Eleonora Bassi, **Ugo Pagallo**, *A Guide to EU Drones Law, and its Work in Progress*, Available at SSRN: <https://ssrn.com/abstract=4273048> or <http://dx.doi.org/10.2139/ssrn.4273048>, 2022

Enrico Bertacchini, Enrico Ferraris, Alice Fontana, *La fruizione delle collezioni digitali di beni archeologici: un'esplorazione delle immagini su Wikimedia Commons*, Digitcult, Dec. 2022

Paola Tubaro, Marion Coville, Clément Le Ludec, and **Antonio A. Casilli**, *Hidden inequalities: the gendered labour of women on micro-tasking platforms*, Internet Policy Review, 11(1), 2022.

Paola Tubaro and **Antonio A. Casilli**, *Human Listeners and Virtual Assistants: Privacy and labour arbitrage in the production of smart technologies*, In Fabian Ferrari & Mark Graham (eds), *Digital Work in the Planetary Market*, MIT Press, 2022.

Wei-Ping Chen, and **Antonio A. Casilli**, "Platform Labor: Who Makes Algorithmic Culture Possible? [平台勞動：誰成就了演算法文化]," *Journal of Cyber Culture and Information Society*, 43, 2022.

Federico Chicchi, Marco Marrone, and **Antonio A. Casilli**, *Digital labor and crisis of the wage labor system*, *Sociologia del lavoro*, 163, 2022.

Deborah De Angelis, L. Sinigaglia, traduzione dall'inglese dell'articolo "Il diritto alla ricerca come garanzia di sostenibilità, innovazione e giustizia nel diritto d'autore dell'UE", di C. Geiger e B. J. Jütte, *Rivista italiana di informatica e diritto (RIID)*, n.1/2023.

Deborah De Angelis, *Verso una regolamentazione sovranazionale dei diritti fondamentali alla ricerca, educazione e accesso alla cultura*, *Rivista italiana di informatica e diritto (RIID)*, n. 1/2023.

Deborah De Angelis, G. Perugineli, S. Faro, "Ricerca, educazione e accesso al patrimonio culturale. Un confronto fra diritti fondamentali ed eccezioni al diritto d'autore. Introduzione", *Rivista italiana di informatica e diritto (RIID)*, n. 1/2023.

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Ciani Sciolla J., **Massimo Durante**, Pagallo U., *The Environmental Challenges of AI in EU Law: Lessons Learned from the Artificial Intelligence Act (AIA) with its Drawbacks*, Transforming Government: People, Process and Policy, 2022

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Ahmed Tlili, Daniel Burgos, Christian M. Stracke, Jon Mason, Mouna Denden, Fahriye Altinay, **Fabio Nascimbeni**, *Impact of personality on educator attitudes towards open educational resources*, Knowledge Management and E-Learning, 2022

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Fabio Nascimbeni, Valentina Goglio, *MOOCS In Italy: An Open and Fragmented Landscape*, Italian Journal of Educational Technology, 2022

Guido Noto La Diega, Guido Salza, Giulia Priora, and Bernd Justin Jütte, *Zooming in on Education: An Empirical Study on Digital Platforms and Copyright in the United Kingdom, Italy, and the Netherlands*, European Journal of Law and Technology, 2022

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Luca Peyron, *Umano e post-umano*, in *Credere Oggi* XLII (6/2022) n. 252, Edizioni Messaggero Padova

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Luca Peyron, *Vita e Pensiero, Uomo, macchina e interazioni teologiche*, Vita e Pensiero, 07-2022

Odile Chagny et al. and **Antonio A. Casilli**, *[The New B2B Labour Intermediaries: Comparing business models in the collaborative digital economy] Les Nouveaux Intermédiaires du Travail B2B : comparer les modèles d'affaires dans l'économie numérique collaborative*, Final report of the BOBCAT project, 2022.

Giovanni Battista Gallus, *Supply Chain Security – I rischi della catena di fornitura*, Clusit Community for security, 2023

Guido Noto La Diega, *Computer programs*, in Giovanni Comandé (eds), *Encyclopedia of Law and Data Science*, Edward Elgar, 2022

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