

ABSTRACTS AND WORKSHOPS

UNITOPIA 2022

COLLECTIVELY EXPLORING THE FUTURE OF
DIGITAL TRANSFORMATION

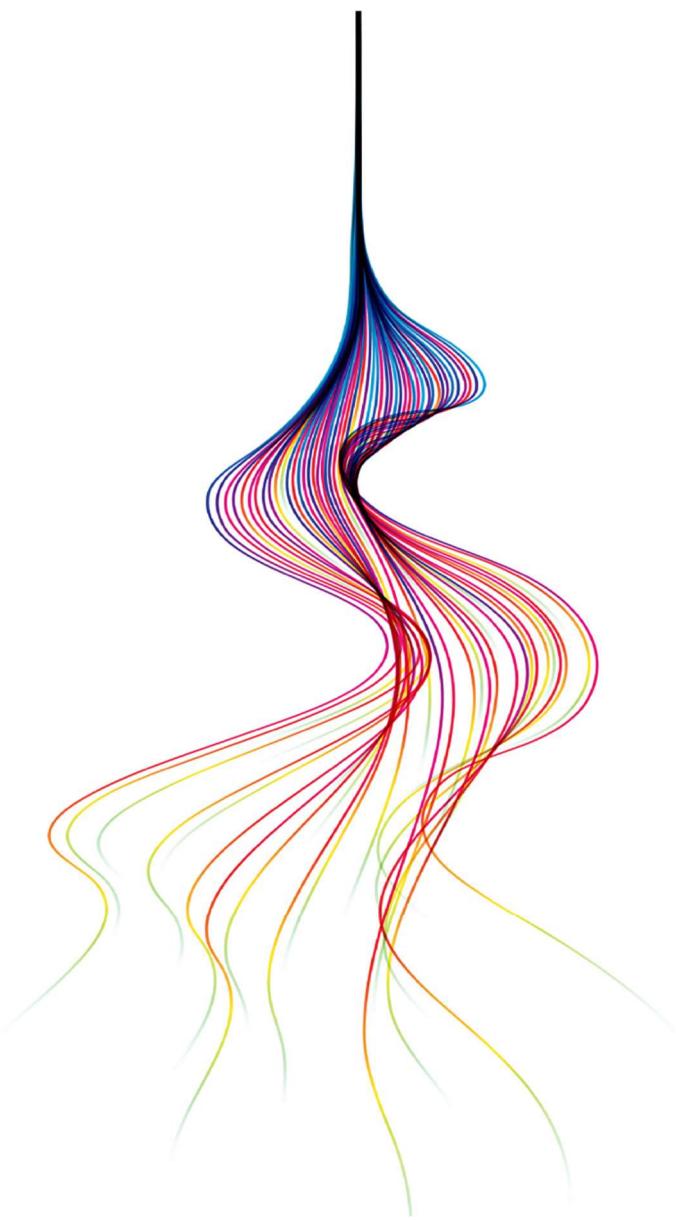


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CALL FOR PAPERS

New forms of information technologies have always been tightly linked with the development of political systems. Even before the emergence of what we call "IT" today, the distribution, selection, and forging of information has been an important element of democratic societies. The emergence of mass media is closely linked to the (in) formation of democratic societies.

This is just one way in which contemporary democracies are shaped and influenced by modern technologies. Digitization poses a grand challenge, as it questions and challenges the ways how democratic systems and its institutions are working to this day. New possibilities of reaching voters, enforcing laws, and enabling rights through algorithmic means, but also new forms of potentially overarching state power, e.g. through mass surveillance, call us to investigate the way how digital technologies impact and shape democracy at large. Personalized advertisement and voter information threaten the common public sphere, polarization hampers democratic discourse, algorithmic forms of social sorting create unequal treatment and infringe basic rights.

But the question is not only how digital technologies are threatening or damaging modern democracies. Rather we want to ask how we can shape digital technologies and the innovation systems that 'make' them in a way that could actually benefit our democratic societies. This goes beyond a traditional understanding of politics, raising the question of what processes, infrastructures, and institutions are necessary to enable and foster democratic systems in the digital age.

At the upcoming UNITOPIA conference we therefore aim to open a discussion about the risks, but also the potentials that digital transformation brings for our democracies. What forms of regulation, or governance are necessary to align digital technologies with a common good? How would we envision future digital democracies? Which political theory concepts of democracy need to be adapted to the technological development and vice versa? How can we sustain and further develop central premises of democracy in a new socio-technical order? And how could we enable processes to build socio-technical institutions and orders for our future democracies? These are just some questions we want to tackle at the conference. We understand the digital transformation as a democratic moment. It forces and enables us to rethink and reconceptualize how we understand democracy in the digital age.

UNITOPIA 2022 IS STRUCTURED IN THREE THEMATIC THREADS

Participation in technology design & values

Value by design is a longstanding concept in the discussion on IT and social values. The design of digital infrastructures and algorithms influences how social interactions are played out. This goes from interface design to the inner workings of machine learning applications. At the same time, participation in technology design has been identified as an important factor in democratizing technology. This raises questions how participation in building the digital structures of contemporary democracies can work, and what pitfalls there are. How can we translate knowledge into digital tools, and how can we communicate the workings and impacts of digital technologies to a broader audience?

Digital infrastructures & democracy

Democracies and democratic processes are not detached from their material and technological infrastructures. Contrary, digital infrastructures are at the very core of democratic institutions such as public broadcasting, the legal system, or citizen engagement. Filter bubbles create severe challenges for the public media system, sentencing decision systems are raising the question of how to mathematically encoded concepts like fairness or justice, and predictive models in the health sector are becoming a basis for political decisions.

Yet, digital infrastructures can also become tools for better, and more democratic decision processes. We want to explore how democratic institutions are or could be changing based on the ongoing digital transformation and what this means for our understanding of democracy at large.

Envisioning the future and policy of digital transformation

Technology is not only changing our understanding of contemporary democracies, but also evokes imaginaries of a potential future. As such, asking how the future of our (digital) democracies is envisioned on a macro level becomes important. Different forms of AI regulation, for example, show different ideas of democratic values and futures. How do we want to regulate, i.e. restrict and enable, digital technologies? How do we envision governance through digital technologies? Foresight processes of possible development paths, but also the analysis of existing imaginaries are important in regard to answer these questions.

PANEL 1 - DIGITAL INFRASTRUCTURES & DEMOCRACY

Maryam Tatari - Dynamics of fairness in German PSM media libraries

Technical University of Munich

Since the early days of Public Service Broadcasting (PSB), fairness has always been part of the debate around the public values which the PSB is standing for. It could have been seen through the PSB blindness over location and class – equal treatment – when it came to program distribution or content quality; what has been categorized under overarching values like 'universality' and 'quality'. Though, it has rarely been bold and owned its own section in the documents and value guidelines of different PSBs, particularly in Europe. In addition, the new trends in content personalization and implementation of recommender engines rise within the PSB framework and shapes part of its transformation into a Public Service Media (PSM) organization. While the recommendation engines and platforms entail their problematization around fair algorithmic decision-making, fairness acts as an infrastructuring force in orienting people, tools, and documents within the PSM.

In this paper, the author will mainly discuss the last line of investigation by shedding light on the case of one of the German PSM, ARD, and its flagship media library products: ARD Audiothek and ARD Mediathek. These platforms, which make ARD and regional broadcasters' offers available online to the user at once, bring a form of infrastructural integrity and quality for the users and members of public service media in Germany. This requires highlighting the socio-technical nature of the recommendation engine and platform, unfolding the different political, ethical, and social choices happening through the development process and looking at the heart of change with a fairness lens. We ask how fairness dynamics - universal accessibility, equal opportunity, and deservingness - are entangled with the ARD media libraries, (re)configuring ARD digital transformation? Moreover, we will specifically look at two parallel processes of collaboration and consolidation taking place within the development of these platforms. The author aims to understand the reconstruction of PSM through various stories centered around fairness and look at how fairness mobilized the development of these platforms and changed the PSM? How does it bring multiplicity to the platforms by extending functionalities, requirements, and stakeholders? The data collection approach includes 15 semi-structured expert interviews conducted between April and December 2021 and collecting related published documents and literature- i.e., protocols, annual reports, guidelines, and papers. It will then be followed by discourse analysis and mapping of the case, helping us have a broad overview and navigate the traces of fairness in ARD media libraries' development process. The data collection and analysis in this article is based on the Bavarian Institute for Digital Transformation (BIDT) funded project, "Coding Public Value."

Maryam Tatari studied Software Engineering at the Amirkabir University of Technology in Tehran, followed by a Master's degree in Science and Technology Studies from Munich Center for Technology in Society. In June 2020, she joined the Digital Media Lab as part of the BIDT project "Coding Public Value." Within this project, she works on alternative ways of bringing values into the Software Engineering process, focusing on the design and development of public service media (content recommender) platforms. In her doctoral project, she explores the formation of value-driven digital public infrastructure focusing on PEACH; a content recommender system developed and empowered by various European actors within the European Broadcasting Union framework.

Paola Pierri - Democratising technology: Towards public oversight on digital transformation

London College of Communication

This paper aims to reflect on the importance of democratising debates and knowledge around digital technologies as a key step to ensure that these technologies are used for the 'public good' and to advance democratic values. Paradoxically, the more digital transformation matters and impact our public spaces, the less the public has been involved on these issues. The digital transformation is one of the areas where the need of rethinking public participation and citizens' engagement mechanisms has become more prominent. Until recently, citizens' role in this field has been predominantly described negatively: as a "lack" of interest or an "information deficit." Thus, discussions and policies on this topic have been often conducted behind closed doors and led by experts and technologists. This paper will interrogate what does participation mean in the context of increased and fast digital transformation and how can citizens and civil society intervene to re-think new governance structures for digitalisation processes to ensure that participation is not only focused on the question of how technology should be used, but open to the question of whether and when technology should be deployed in the first place.

The paper draw on an international case studies' review which has explored best practices for community participation and engagement mechanisms on digital technology, and specifically on governments' strategy for Artificial Intelligence. Participatory and deliberative procedures are in fact acknowledged as increasingly important to ensure an ethical use of technology for the 'public good', but at the same time proper participation is struggling to achieve impact in a context of uneven power structures and deeply influenced by the current 'corporate digital imaginaries'. These imaginaries are in fact deeply influencing how the problems are framed and what possible alternative solution could be even conceived as possible and worth debating. Drawing on theory and practical examples, this paper argues for developing approaches to digitalization that are based on democratic practice of public participation, and advance democratic principles as a result.

Paola Pierri has a background in Politics and a doctorate in Design Anthropology. She has been a Fellow at the Weizenbaum Institute working on issues of Digital Sovereignty and Digital Inequality, addressing the question of the impact of digital tools on our democratic lives. She is a visiting lecturer at the London College of Communication and the Technische Universität in Berlin, where she teaches on the topics of design research in the public sector, design for policy making, digital inequalities and digital activism.

Nikolaus Poechhacker - Democratic algorithms as reflexive moments

University of Klagenfurt

Algorithms in the media system have been the focal point of discussions about public polarization in democratic states for some time now. The debate about filter bubbles and echo chambers and their harmful impact on public discourse sparked a debate about the compatibility of democracy and new forms of information distribution. Splintered publics and the role of recommender algorithms have also been taken up in the context of public broadcasting. Especially, as public media services have a dedicated function within democratic systems: to distribute diverse information and provide a broad overview on the political, social, and cultural events and discussions. This led to initiatives demanding and trying to implement recommender systems that are in line with the democratic ideal of diverse information provision.

Based on an ethnography and praxeological analysis of a development project in a public broadcaster the challenges that came up during the implementation of a public broadcasting recommender system will be presented, focusing on the different attempts by the developers to enact and implement diversity as a guiding design principle. Agreeing on a definition of diversity that is implementable in a value by design process thereby was challenging. While algorithmic forms of diversity could be formulated, they were often not compatible with the implicit understandings of diversity brought forward by professional editors and journalists. Thus, the development team faced the problem of mathematically formulating diversity as a concept but at the same time relate it to the implicit professional knowledge and work practices of journalists and editors. This friction lead to the question what diversity even is and can be seen as an irritation to the well-established understanding of the concept within the institution.

Algorithms thus, while often seen as a threat to democracy, also have the potential to steer democratic debate in and about our "ever-evolving, ever-imperfect democracies". Digitization requires democratic institutions (trying) to make often implicitly held assumptions and understandings explicit and translatable into mathematical forms. As such, development projects and the involved experts are becoming sites in which democracy is being negotiated and shaped. This can provide moments of reflection about implicit understandings of values like diversity, fairness, and democracy.

Nikolaus Pöchhacker is Senior Scientist at the University of Klagenfurt. Before his academic life, he worked as an IT professional. He studied Sociology (BA), Computer Science (EC), and Science and Technology Studies (MA) at the University of Vienna. He worked as a research assistant at the Institute for Advanced Studies in Vienna, the Digital/Media/Lab at MCTS, Technical University of Munich, and the University of Graz. In his work he is researching the relationship between democratic institutions, social order, and algorithmic systems in various domains, bringing together perspectives from Media Theory, STS, Computer Science, and Sociology. Most recently, he is exploring the impact of algorithmic procedures and digital legal technologies on the legal system.

PANEL 2 - ENVISIONING THE FUTURE AND POLICY OF DIGITAL TRANSFORMATION

Goda Strikaitė-Latušinskaja - Technologies in the public sector - is our rule of law in jeopardy?

Vilnius University

A broad range of decision-making activities are increasingly being delegated to algorithms. The digital environment has introduced new challenges for the public sector and the pandemic has accelerated that change. While technology helps to make administrative processes more impartial, due to reduced human involvement, more transparent - by making public records traceable - and promises a faster and cheaper provision of services, certain risks remain unexplored. Numerous examples have demonstrated that AI-based solutions are prone to biases and that algorithms may be arbitrary and opaque, also security-related concerns exist in relation to the use of information technology in the public sector. Bold applications of innovations in public sector (such as, for example, automated administrative orders, a robot-judge project in Estonia, a case management and decision support tool used by U.S. courts to assess the likelihood of a defendant becoming a recidivist - COMPAS) show determination to transform the concept of provision of public services we know today. However, a question whether democracies survive potential threats to legal norms arises.

The aim of the contribution is to discuss the status quo of various technologies in the public sector and to evaluate, to what extent we should transform traditional means of providing public services without putting the rule of law in jeopardy. It contributes to an ongoing discussion by raising new questions fostered by technological developments regarding the core element of any legal system - the rule of law.

Goda Strikaitė-Latušinskaja is PhD candidate, lecturer and research assistant at the Faculty of Law of the University of Vilnius. Investigating the principles underlying the implementation of technology (including artificial intelligence) in the public sector is the general goal of her research. She is currently a member of a scientific thematic group of Vilnius University "Changes in the administrative law system: towards an adaptive leadership in public administration" that inter alia researches transforming impact of technology in public administration.

Alice Baroni - Envisioning AI and algorithmic governance for a democratic news media system and gender justice

University of Padova

Artificial Intelligence technologies (AI) are transforming the news industries and posing unprecedented challenges for the news ecosystem, public sphere and democracy more generally. The malicious uses of bots to widespread disinformation and target journalists as a pattern of abuse to control/influence/distort/weaken news production are a key challenge that journalists must overcome to fully exercise the news media's role in democracy. That is, to provide citizens with credible and quality information and act as a forum to activate the debate for people to participate in discussions that affect their lives, and function as a public watchdog. The rise in violent attacks on journalists (especially against women journalists online) and hostility towards the press, perpetrated increasingly by the political right, is also seen by professional journalists as one of the greatest threats to journalism and democracy today. Within this changing scenario, it is crucial to engage with policy frameworks pertaining to AI, algorithms and regulation of digital platforms, to envision the translation of these provisions at the level of news media industries (NMIs).

This contribution will do so by addressing the core questions: How do we envision AI and algorithmic governance that might contribute to the news media's democratic performance? More specifically, how do we foresee self-regulatory mechanisms at the level of NMIs, pertaining to AI and news automation, that might advance gender equality in and through the media? Aiming at contributing to the ongoing discussion on AI technologies in their interplay with freedom of expression, media freedom and gender equality in the overall framework of democratic challenges, this contribution shall combine democratic and journalism theories with policy and gender-sensitive analysis of European policy frameworks pertaining to AI, algorithms, and digital platform companies. The contribution's results shall inform media professionals dealing with the risks and benefits of AI within the journalistic profession, digital sphere, and democracy more generally. Furthermore, these results shall open up possibilities on how the development of self-regulatory mechanisms at the level of NMIs might strengthen the democratic function of the news media and advance gender justice.

Alice Baroni is a Postdoctoral research fellow at the University of Padova, exploring the implementation and impact of AI technologies in news industries in Italy and Finland. Alice holds a PhD in Communication and Media Studies from the Queensland University of Technology and has previously worked at the Pontifícia Universidade Católica do Rio de Janeiro. Her research interests lie in intercultural dialogue(s) and knowledges; (visual) ethnographic and participatory research in contexts of urban/digital violence; the relationships between conventional and new media; AI governance, media policy and gender equality.

Anne Marte Gardenier - Analyzing cybersecurity imaginaries to make technological citizenship possible

Eindhoven University of Technology

The digitization of society brings along challenges to democracies. To tackle these problems, a democratic government should make 'technological citizenship' possible. This paper analyses a developing case study and demonstrates how these rights and duties take shape. It shows how competing socio-technical imaginaries about the meaning of 'security' in cyberspace hinder the implementation of rights and duties that effectively protect citizens from the impact of digitization. These competing imaginaries should be brought to the surface so they can be reconciled.

The case study concerns recent revelations which show how governmental institutions in The Netherlands (the police, municipalities, the anti-terrorism unit and defense) use open-source intelligence (OSINT) tools to monitor the behavior of citizens online. Currently, there are no laws to regulate OSINT activities by governmental institutions. These revelations have caused public concern. Opponents of such monitoring see it as an invasion of privacy which undermines the security of citizens. Proponents of such monitoring see it as essential to prevent attacks to national security, such as terrorist attacks and the spread of disinformation. This underlying dispute about what constitutes 'security' in cyberspace hinders the creation of effective laws that make technological citizenship possible.

The paper aims to demonstrate the difficulties in desecuritising (moving security issues out of the realm of security and into the realm of politics, where the problems and its solutions are subject of political and public scrutiny) certain public issues and in applying in practice a human-centered cybersecurity: The underlying dispute about 'security' hinders the creation of effective laws that make technological citizenship possible. Competing socio-technical imaginaries lie at the heart of this dispute and should therefore be brought to the surface so they can be reconciled.

Anne Marte Gardenier is a PhD candidate in the Philosophy and Ethics research group at Technical University Eindhoven, where she focuses on strengthening citizens' cyber resilience against digital threats such as cybercrime and disinformation.

PANEL 3 - DIGITAL INFRASTRUCTURES & DEMOCRACY

**Antonios Kouroutakis - Public data and the transformation of the state:
Contemporary challenges to democracy**

IE University Madrid

Humanity always moves forward. From the agricultural revolution, we have progressed to the industrial revolution and nowadays another revolution is looming, the so-called information revolution. Such revolution is becoming tangible, based on the growing computational power and the rise of AI in combination with network connectivity. In practice, the benefits from such development were given the opportunity to be tested with the Covid-19 pandemic. As the measure of social distancing was implemented across the world, the public and the private sector were required to adapt to a new reality; services and the relationship between citizen and administration moved online.

While a number of concerns have been already voiced in relation to transparency, discrimination and due process, this article will turn its focus on the challenge of the public data. On the one hand, digital technologies can dramatically improve the interaction of the people with the public sector. On the other hand, the public data and the information concentrated in the hands of the government via the introduction of digital ids, passwords, biometric registration, and verification applications might lead to risks for democracy.

Such processing may allow incumbents to reveal sensitive information about the political views of the citizens, and accordingly to design political schemes based on such information and even draw electoral maps. As a result, the pathology of political self-entrenchment might be exacerbated due to the emergence of the algorithmic state. That said, the aim of this article is to analyze and elaborate on the threats from the processing of public data by incumbents to modern democracy, and how such problem shall be regulated.

In doing so, it will first discuss the digital integrated procedures of the algorithmic state in relation with two areas tax procedures and healthcare. Then it will analyze the type of data gathered, and it will focus on the potential threats from the processing of such data. Finally, it will elaborate on already existing safeguards in securing such data, and on how courts should examine challenges over governmental decisions, which are suspect to self-entrenchment.

Antonios Kouroutakis is Assistant Professor at IE University in Madrid and teaches Constitutional Law and the Regulation of New Technologies and Startups. He has taught a variety of law courses and conducted research at the City University of Hong Kong, the Free University of Berlin, FVG Sao Paolo, and Aristotle University of Thessaloniki. He received a DPhil in Law from University of Oxford and an LLM from UCLA School of Law. His research interests lie mainly in the field of constitutional engineering, public law and regulation. In particular, he is interested in the concept of separation of powers, rule of law, emergency legislation, and the regulation of new technologies.

José Felipe Alarcón González - Effective democracy or the generalized other

Universidad Nacional de Educación a Distancia (UNED)

Most recent academic studies of ICT's prefer to work on a strong sociological critique of digital technologies instead of focusing on the possibility of unveiling a fundamental positive outcome. A few solid philosophical attempts have been carried out from the fields of philosophy of information and normative ethics. This paper uses the sociological approach to defend that, ICT's and digital technologies provide a quasi-ideal ethical infrastructure to achieve effective democracy. However, they present the challenge to order individual participation to produce the moral conditions for effective democracy. For that, it is necessary not to look at democracy as an ego right to expression, but as an eco-moral cultured land. Democracy is not an input but an outcome. Democracy does not happen without evaluating reception.

A voice without assessment lacks its ethical dimension and makes the political system stagnate. By using the theory of the social construction of reality (from Austrian authors Peter L. Berger and Thomas Luckman), democracy can be thought-out as the contribution of significant others. And most importantly, effective democracy can be only achieved when new secondary institutions organize the significant others into a generalized other (following the concept of the philosopher G.H. Mead). As a result, the paper proposes that digital technologies afford the opportunity to ameliorate the moral character of the individual by reversing the direction of looking at democracy: from an individual right to voice into an ordered culture of voices, from preserving rights to serving rightly. This perspective could illuminate policy makers to set up the right processes to achieve an effective democracy.

José Alarcón holds an M.B.A. from Thunderbird and a PhD in Moral and Political Philosophy from U.N.E.D. He is currently researching and consulting. His experience includes 11 years of corporate work in the automotive industry and 12 years of research in the field of humanities. He has lived and worked in a multicultural environment including long assignments in the U.S., Singapore, Japan, U.K., and Germany. His current area of interest is Ethics and Philosophy of Technology.

**Robin Graichen, Manav Bhatia, Suresh Lodha, Udo Heller and Eric Linhart -
Identifying utility-maximizing and equilibrium coalitions of political parties in
government formation processes using a visualization approach**

University of Oldenburg, University of California Santa Cruz and Chemnitz
University of Technology

Coalition analysis tools assist both scientists and practitioners as well as the general public: They allow researchers to conduct substantiated analyses on possible government formation outcomes after parliamentary elections, they can support politicians in making optimal decisions in coalition negotiations, and they provide voters with the opportunity to easily find out whether the parties have decided in their best interest by forming the coming government coalition or going into opposition, respectively. Likewise, coalition tools can be used by journalists in the aftermath of elections for fact-based media coverage. In a nutshell, such tools contribute to foster transparency in multiparty systems by applying algorithms and artificial intelligence techniques to decision support in the context of government formation and thus provide an example on how digital infrastructures can become tools for better and more democratic decision processes.

Existing coalition tools, however, differ considerably with respect to their functional details. 'Coalizer', a recently introduced web application for analyzing government formation, is the most innovative coalition tool and provides the user with different analysis and calibration options. Taking into account both the distribution of parliamentary seats and the parties' policy positions, the tool can determine utility-maximizing choices for each party on the basis of state-of-the-art coalition theory. In its current implementation, however, coalition analysis outcomes are merely represented in a text-based format, hindering users to grasp intuitively the core of analysis results with respect to the parties' utility-maximizing choices and possible equilibrium coalitions. As visualizing data can produce relief, our contribution seeks to solve this significant shortcoming by means of digital techniques of information visualization, introduces a novel graphical approach for identifying utility-maximizing choices and equilibrium coalitions in government formation processes, and thus aims to make the potentials of coalition theory more accessible and comprehensible especially for a broader public. Our tool is deployed as an easily usable web application and available online at www.mytuc.org/twhk.

Robin Graichen completed the PhD program at the Department of Political Science, Chemnitz University of Technology (TUC), Germany, and is currently a postdoc researcher at the University of Oldenburg, Germany. He has a MA in Political Science and an MSc in 'Computer Science for Graduates in the Humanities or Social Science' from TUC. His current research interests include coalition theory, coalition formation analysis tools, and voting advice applications.

Manav Bhatia graduated with a BS in Computer Science and Engineering in 2021 from the University of California, Santa Cruz. He is currently a Master student in Computer Science at the University of Michigan. His research interests lie in database systems, distributed systems and data visualization.

Suresh Lodha is Professor in the Computer Science and Engineering Department at the University of California, Santa Cruz. He has an MSc in Mathematics from IIT Kanpur, India, an

MA in Mathematics from the University of California, Berkeley, and a PhD in Computer Science from Rice University, Houston, TX. His current research interests include data curation, analytics, and visualization of socio-economic-political data.

Udo Heller is research assistant at the Faculty Computing Center, Department of Computer Science, Chemnitz University of Technology. He has an MSc in Computer Science from TUC. His research interests include development of web applications, database systems and data analytics.

Eric Linhart is a Professor for Political Science at the Chemnitz University of Technology, Germany. He holds university degrees both in Political Science and Mathematics from the University of Mannheim, Germany. His research interests include coalition theory, elections, electoral systems, game theory, and political parties.

PANEL 4 - ENVISIONING THE FUTURE AND POLICY OF DIGITAL TRANSFORMATION

Alba Ribera Martínez - The new lantern laws: Facial recognition on the entry/exit system

University Carlos III of Madrid

Since 25 October 2017 the European Commission has developed the Entry/Exit System for stronger and smarter EU borders aimed for non-EU national crossing the external borders of Member States within the Schengen Area, i.e., Ceuta and Melilla or the Hungary-Serbian border. The Entry/Exit System (EES) will capture facial images along with other biometric data to associate to a person's name or type of travel document (normally, non-existent).

Although the aim of this technology is to save on costs and improve efficiency within the security state forces, there is a long-standing precedent showing that these types of technology tend to perpetuate direct and indirect forms of discrimination. On top of this, facial recognition systems, albeit operating on an automated basis, also tend to inject bias into their performance so their impact is disparate on its results, insofar as algorithm design as well as auditing and user applications tend to be biased. As a result, the trade-off for increased efficiency is an increased possibility of false positives and negatives on law enforcement.

In this context, the author contest the Proposal for a Regulation on Artificial Intelligence's position on those systems that are likely to pose high risks to fundamental rights and safety with the exemption applicable to the EES related to safety at the external borders of the Member States. We will consider the possible conflicting legal problems involved with discrimination and the feasibility of law enforcement.

Alba Ribera Martínez is PhD student in Competition Law at the University Carlos III of Madrid. She is currently working as Assistant Researcher to the National Commission of Markets and Competition in Madrid.

Pedro Pinheiro - Left populism and the digitalization of democracy

University of Minho

The contemporary democratic crisis is caused by the fact that democracies define themselves by two concepts that seem to be declining: the electoral dimension and the notion of participation. The crisis of representation that we are living in is the expression of the voters' discrediting on elections and politics. Since the neoliberalism paradigm took place in the West, people started feeling, even more, that their representatives have no importance in core policy decisions. In order to find a solution to democracies' problem, Mouffe presents a left populist answer through a dynamic of agonism, between the minorities, as a way to face and attack the oligarchy (which is considered to be the group responsible for technocracy).

As Mouffe uses the concept of power to maintain a combative posture to the technocratic consensus (and uses this as a strategy to fight nowadays' governance logics) the paper will show how the digitalization of democracy could be a method to achieve Mouffe's goal. I will argue that the digitalization of democracy has the right tools to reform, enhance or even replace legislative functions of the contemporary institutional model. This could mean more popular participation in the way that Mouffe's radical and agonistic democracy theory defends.

This exposition will be structured in three steps. Firstly, it will be exposed and analysed the present digital moment and its relation to network power. Secondly, it will be conceptualized Mouffe's proposal for a solution to democratic crisis, explaining the concepts that the radical and agonistic democracy theory defends: sovereignty horizontalization, counter-hegemony and articulation of political subject. Thirdly, it will be shown the relation between Mouffe's theory and fluid power that Zwitter and Hazenber conceptualize as a possible mode of governance that is already in action and that was made possible due to blockchain technology. By following these steps, the author will be able to envision a new paradigm for the future of democracy and a mode of governance through digital technologies.

Pedro Pinheiro is PhD student at the Centre for Ethics, Politics and Society at the University of Minho (CEPS). He holds a BA in Philosophy from University of Coimbra and was visiting student at the University of Toulouse. Currently, he is finishing his Master degree in Political Science at the University of Beira Interior, developing his research on the importance of Hannah Arendt's thought for the comprehension of democracy's crise. Pinheiro's current PhD project "Left populism: a research on a subversive dissent" is funded by FCT (Foundation for Science and Technology), supervised by Giuseppe Ballacci (CEPS) and co-supervised by Alexandre Franco de Sá (University of Coimbra).

**María Asunción Pérez de Zafra Arrufat, Jessica Berger, Katharina Maria Maitz,
Barbara Gasteiger-Klicpera - Towards high-quality open educational resources:
Actual paradigms through a scoping review perspective**

University of Granada and University of Graz

Among the potentials and risks that the digital transformation brings for our societies, inclusive education is one of the key challenges and opportunities. During the Covid-19 pandemic, digital teaching and learning became ubiquitous and Open Educational Resources (OER) that consider an inclusive perspective became more visible as possible means to enable inclusive learning experiences. Our research aims to explore and contextualize the current scientific literature on methods and tools used to guide the development of high-quality OER from an inclusive perspective.

Recent publications have shown how OER can influence the development of inclusive knowledge societies and meet Sustainable Development Goal 4 - "quality education" of the 2030 Agenda. In this context, research faces new challenges in determining how to create and select high-quality OER. To investigate these challenges, a scoping review is conducted. This specific type of literature review does not only allow to establish the current state of research but also identifies research gaps that should be further investigated. It will contribute to detecting actual education professionals' methods for OER creation as well as related challenges and difficulties. In this paper, we present definition issues for the concepts of OER, accessibility and universal design (for learning). We also lay out the methodology applied when conducting the scoping review: the inclusion and exclusion criteria that fit this study paradigm as well as the procedure for selecting the keywords, which has led to some difficulties in translating them into the working languages English, German and Spanish. We present approaches to systematize actual research lines and discuss first search results that will contribute to mapping the actual literature and a broader understanding of the state of research. Finally, we will preliminarily address innovative solutions for the gaps found and illustrate the significant potential of considering inclusive aspects in OER for the development of future sustainable and inclusive societies.

María Asunción Pérez de Zafra Arrufat, received her PhD in Languages, Texts and Contexts from the University of Granada and is currently a Postdoctoral Researcher at the Research Center for Inclusive Education of the University of Graz. Her research focuses on digital accessibility to information and communication from Translation Studies.

Jessica Berger, BA MSc, is currently doing her PhD in Inclusive Education at the University of Graz and is a predoctoral researcher at its Research Center for Inclusive Education. Her research focuses on Open Educational Resources (OER) with a special focus on their inclusive use in schools.

Katharina Maitz, MA PhD, received her PhD in Inclusive Education from University of Graz. She is currently Postdoctoral Researcher at the Research Center for Inclusive Education and at the Institute of Interactive Systems and Data Science of the Graz University of Technology and Know-Center GmbH Graz. Her research focuses on inclusive technology-enhanced teaching and learning.

Barbara Gasteiger Klicpera is Professor at the Institute of Education Research and Teacher Education of the University of Graz. Her research focuses on the promotion and further development of inclusion at all ages, and in particular on teaching development in heterogeneous classes, diagnostics and intervention for reading and spelling difficulties as well as social and emotional difficulties of pupils, intervention research and critical health literacy in pupils. In recent years, she works on how digital technologies can support participation.

Tomás Guarna and Eric Gordon - New imaginaries of institutional listening in urban governance

Massachusetts Institute of Technology

In March 2020, the Covid-19 pandemic forced many interactions between citizens and governments to move online. Public engagement practices had to shift suddenly. Instead of gathering in person at a public meeting, local governments worldwide faced the challenge of making sense of community needs and concerns remotely. This technical shift corresponded with a significant social shift as well. The sudden rise in social justice protests in the summer of 2020, prompted by the murder of George Floyd in the United States, as well as the rise of right wing populism, represented the simmering anger and chronic mistrust that many people were feeling towards government. From either side of the political spectrum, people were demanding more oversight from their institutions and were less tolerant of institutionally framed conversations. With these changing demands of local government, alongside government's new acceptance of digital media as a natural means of civic engagement, the interface between government and publics has changed.

In this context, we identify that the paradigm of public engagement in democratic governance of cities have shifted to a paradigm of listening, where institutions seek to understand the public's priorities in order to shape their own. We understand institutional listening as a practice emerging through public investment in conversation tools, social media analysis, creative visualization platforms, democratic decision-making platforms, and artificial intelligence to source sentiments and themes. While government institutions are motivated by representing their authentic listening to distrusting publics, they are also motivated by surveillance and control. The rise of technologically augmented listening as a prominent method of governance suggests a datafication of public relations and insights that, if not well understood, can lead to the perpetuation and justification of existing harms.

Based on 20 in-depth interviews with civic technology developers and policymakers in Boston, Philadelphia, Barcelona, and Madrid, we explore the imaginaries behind utilizing novel technologies for civic engagement purposes. From these interviews, we identify new conceptions of monitorial citizenship, transformations in understandings of humanity and affect in smart city infrastructure, and changes in approaches to representation. Finally, we explore the implications of these new conceptions in smart city governance.

Tomas Guarna is a graduate student at MIT's Comparative Media Studies program where he is researching at the Civic Design Initiative. He has been accepted as PhD student at Stanford's Department of Communication. He is interested in civics, governance, and trust, and is writing a thesis about cryptocurrencies and public governance. Before MIT, he worked in the Office of the President of Argentina.

Eric Gordon is professor of civic media and the director of the Engagement Lab at Emerson College in Boston and visiting professor at MIT. His research focuses on the transformation of public life and governance in digital culture, specifically looking at the context of equitable and generative "smart cities." For the last ten years, he has explored the role of play and creativity in civic life, looking at how game systems and playful processes can augment traditional modes of civic participation.

PANEL 5 - DIGITAL INFRASTRUCTURES & DEMOCRACY

Francesco Ambrosini - Detecting criminal firms: A machine learning approach

University of Padova

The paper deals with the employment by organized criminal group of legal firms to pursue illegal goals and the question if through machine learning techniques is possible to detect them by using their financial statements' information. In a similar accounting field, Bao et al. (2019) introduced the use of machine learning algorithms to detect fraudulent behavior on listed firms' financial statements with promising results. Similarly, the paper aims to apply this set of techniques to classify firms financial statements according to their similarity to criminal firms' ones. To do so, a large dataset of more than 8.000 companies whose owners or executives were charged for mafia crimes in Italy in the time span 2008 – 2020 was collected. A much larger sample of legal firms (around 100.000) was added. The data was split in two: a training sample and a test one. A pool of random forest algorithms was created to differentiate the two groups of firms' financial statements in the training sample and the performance on the test one was observed: results has been very promising in terms of precision and recall.

Francesco Ambrosini is Research Assistant and PhD candidate in Economics and Management at the University of Padova. He holds a Master Degree in Business Administration from the University of Padova and a Joint Bachelor Degree in International Business Administration from the University of Montpellier. His research interest lies in the applications of AI to the financial reporting system.

Angelika Adensamer - Automated language analysis in asylum procedures - legal protection against the use of algorithms

University of Graz

The project DiGrenz investigates digitalisation in asylum procedures and specifically automated language analysis for the determination of origin (voice biometrics), short "LADO". Such a system is used by German authorities, and in the stage of evaluation in Austria. This software analyses speech samples of asylum seekers and correlates them to the most probable country of origin. It is supposed to assist the authorities in determining the citizenship of a person. This evidence is critical for the overall decision on the right to asylum. These language assessments - automated and otherwise - have been criticized by linguists as they are often based on wrong assumptions about the correlations of language and citizenship. The automated language analysis has a high error rate and also causes concerns about data protection, discrimination, transparency, rule of law, etc.

This also raises questions about legal protection: how can affected persons use their legal rights? How can they file complaints if their asylum application was decided upon on the basis of wrong results of software? How can the algorithm itself become subject of legal scrutiny?

Legal protection against algorithmic systems is a substantial problem today as they are more and more used as decision-making support. Traditional legal systems often don't have an obvious way of recourse and cannot address problems that are specific to algorithmic systems used by authorities. This contribution offers an overview of legal options and problems of protection against wrongful algorithmic assessment in the Austrian administrative procedural law and attempts to offer concepts for new legal remedies.

Angelika Adensamer studied law at the University of Vienna and Criminology and Criminal Justice (MSc) at the University of Oxford. She has worked at the Institute for the Sociology of Law and Criminology (IRKS) and the Vienna Centre for Societal Security, as well as for several years in the NGO and political sector. She was a member of the Data Protection Council from 2018-2020 and is a member of the editorial team of the journal *Juridikum*. Her research focuses on police surveillance, data protection law and algorithmic regulation.

Stefan Koenigshofer - Should we be afraid of the robot judge? AI-based (prediction of) court decisions today and tomorrow

University of Graz

The revolution in the field of artificial intelligence has changed the world in just a few years. Today, litigation outcome prediction is a rapidly growing field; large sums of money are invested worldwide, but especially in the US, where providers already offer AI-based tools to predict court decisions.

The judiciary is one of the core elements of a democracy, so everything that potentially touches it must be eyed with utmost diligence. The vice president of the Austrian Bar Association stated that one trend to keep up with was "the further digitisation of the judiciary, including the limits of the possible use of artificial intelligence, while at the same time rejecting any 'robot judge'. Although only mentioned in passing, the significance of this statement should not be underestimated: It expresses concern about rapidly approaching developments for which the "traditional" legal sector does not (yet) have an answer.

This contribution aims to take a look at the topic from a jurisprudential perspective. There seems to be a broad consensus that the impact of AI-based decision prediction tools will be significant, but how they will actually change the daily work of courts, judges and lawyers is still unclear. Since there is no legal regulation – apart from a highly controversial law in France – fundamental questions arise: How much power should be given over to "opaque" algorithms, and which decisions should in any case be reserved to humans? Are there any judicial decisions at all that an algorithm can make? Even if technical progress opens great potentials, due to the special sensitivity of the judiciary, a cautious approach must be taken: To turn the screws of the judiciary is to turn the screws of democracy itself.

Stefan Koenigshofer completed his law studies at the University of Graz with a thesis on "Artificial Intelligence for the Prediction of Civil Court Decisions – Application Scenarios and Legal Frameworks". He is currently working at the Institute for Civil Procedure Law and Insolvency Law.

PANEL 6 - PARTICIPATION IN TECHNOLOGY DESIGN & VALUES

Michele Veneziano - Monitoring innovation: Tech watchdogs and digital public services in Italy

University of Bologna

The term digital public services refers to those services provided by Public Administration (PA) via ICTs to citizens and/or private entities. Across Europe, digitalization of public services is a core element of digital transformation plans, and delivering such services requires the development and orchestration of a complex ecosystem of apps, websites, enabling platforms, and digital infrastructures. Several social actors shape digital public services, but not all of them have been equally studied. For instance, most of the attention in co-production studies focused on the role of end-users, exploring how citizens actively participate in the co-delivery and co-design of public services. Nevertheless, the role of collective actors such as civil society organizations that act as watchdogs has been largely overlooked, even though these types of organizations are flourishing all over Europe. This study conceptualizes the analytical category of "tech watchdogs", defined as those bottom-up initiatives and organizations that monitor the development, functioning, and usage of a technology or of a set of technologies. This work further investigates the role of two tech watchdogs' initiatives in Italy that actively engaged in monitoring the development of digital public services. Since the digital transformation of PA in Italy is still in its early days, this gives us the possibility to look at the digitalization of public services in the making. Based on in-depth interviews with activists and desk research on the documents/tools they produce and the initiatives they carry on, this work explores monitoring activities as co-production practices and examines the point of view of tech watchdogs (the opportunities they seek and encounter; the limitations they face; and the values that guide their effort) in the social shaping of digital public services.

Michele Veneziano is a PhD student in Political and Social Sciences. He graduated in Sociology at the University of Bologna and in Communication, ICT and Media at the University of Turin. His interest lies in Science and Technology Studies, Platforms, Digital Media and Privacy. In his PhD project he is exploring the social shaping of digital public services and technologies, investigating the role of different actors (e.g., state, developers/designers, civil society organizations) in the context of digital transformation.

Ivan Veul - Analysing the privacy sandbox: Google's participatory project to remove third-party cookies from Chrome

Radboud University

Whether it is search engines shaping our information diets or social media changing the way we interact with each other, in today's digital society, information and communication technologies (ICTs) mediate the lives of billions of people. Given the tremendous capacity of ICTs to mediate our worlds, it is very important that the decisions about these ICTs reflect broader societal needs and values. In practice though, this does not always seem to be the case. Twitter for instance received heavy public criticism over its "undemocratic" decision to ban Trump from its platform and Facebook has been repeatedly pressured over its lackluster response to the dissemination of disinformation on its social media.

While these concerns suggest that there is a need to further democratize ICTs, any such intervention can only be effective if there is sufficient knowledge about how such ICTs are governed today. Without this knowledge it is impossible to identify what is problematic about an ICT's governance or how its decision-making could be improved. And yet, when it comes to Big Tech there is little scientific literature that describes how their influential technologies are governed in practice.

This paper aims to fill this gap by describing and evaluating the decision-making of Google. In particular, this paper will look at the Privacy Sandbox – an ongoing project in which Google, ad-tech actors and the British government are working on the discontinuation of third-party cookies in Google Chrome. In this multistakeholder process, decisions are made that will have a great impact on the online advertising ecosystem and the Web at large. In this paper, I will analyse how these decisions come about and how they incorporate (or fail to incorporate) the concerns of Internet users and other stakeholders. In my analysis of the Privacy Sandbox I will use Deweyan theories of democracy and STS reinterpretations of it, to answer whether the Privacy Sandbox is a desirable way to make decisions and how the decision-making might be improved for future cases.

Ivan Veul is a PhD candidate at both the Institute for Computing and Information Sciences (iCiS) and the Institute for Science in Society (ISiS) of Radboud University. After training as a data scientist, he went on to specialize in Science and Technology Studies. In his current research, Ivan Veul combines both disciplines to inquire into Google's use of personal data. Specifically, his project aims to stimulate constructive deliberation between civil society, governments and Google about how we can better align Google's data practices with the norms, values and needs of civil society. At the core of Ivan Veul's work, lies the belief that, in our current digitized world, civil society needs to be empowered to participate in a reflection on technology that considers not only technical issues, but also societal and ethical ones.

Adrian Melillo - AI value chains: How they can inform our understanding of technology design and the impact of intelligent systems

Australian National University

Exponential growth in data and computing power has fuelled advancements in Artificial Intelligence (AI) and ignited calls for effective regulation and governance of these technologies. Yet the debates around how we restrict and enable these technologies are often limited in that they imagine the technology and the actors who use the tech as an undifferentiated mass who require the same oversight and controls. This leads to shortcomings with AI related governance and ethics frameworks in that they are not codified in a realistic and enforceable way.

This paper argues for a differentiated understanding of the actors involved in AI ethical regulation and their activities in building AI systems. It advances the debates regarding AI regulation by developing a theoretical model of the AI Value Chain (AVC) to describe and differentiate the technologies, actors and procedures through which AI systems are brought into existence. It develops AVC from a base concept used in management theory and applies it to the field of AI, to describe, categorise and analyse the main activities and actors involved in the production of AI systems: algorithm programming, problem definition, data management, ML model generation, and application development. Actors consist of specialist AI research institutes, tech companies and potentially public and private actors in virtually every industry and government agency. This model will facilitate critical examination of what is required at a micro-level to ensure key ethical principles such as explainability and transparency are realistic and enforceable, as their meaning and properties change depending upon which stage of the value chain we are examining.

This paper will test and develop the explanatory capacity of this model by interrogating systems built using the Generative Pre-trained Transformer 3 (GPT-3) model. Through this we can advance our understanding of how the technology gets embedded into the systems we use and the opportunities for bringing them to scale safely and responsibly.

Adrian Melillo is a student at the Australian National University and the University of Cambridge where he is researching the political economy of Artificial Intelligence (AI). Professionally, Adrian has a long career working in technology in executive positions ranging from large multinationals to mature start-ups and has spoken and written widely on the opportunities and risks associated with new technologies.

WORKSHOPS

Mario Müller and Philipp Weißert - Proposal Writing Workshop

In this hands-on workshop, you will learn the main parts of a grant proposal, but you will also have the opportunity to apply the knowledge gained to a concrete proposal that you will develop together with your peers and get feedback from our experts. You'll also learn what funders look for in a proposal and what they don't like to see.

Hildrun Walter - Get on stage and get the message out

You have a special research interest, expert knowledge and are working on a project? So, get on stage and get your message out! Especially in times of social transformation and great uncertainty, science and research are an important guide for discourse and decision-making. It is therefore all the more important that scientists share their knowledge and address the questions, needs and doubts of the population. This skills workshop is about targeted science communication, about presenting yourself and your topic in an exciting way and developing a clear take-home-message for your audience.

Luzia Strasser and Nora Krenmayr - The forgotten material dimension of digitalisation: From e-waste to resource?

When talking about a digital transformation of society, we are often discussing possibilities and benefits while overlooking the significant material dimension of these processes. According to the Global E-Waste Monitor (2020) 53.6 megatons of e-waste are produced annually, which is projected to grow to 74.7 megatons by 2030, making it one of the fastest-growing waste streams. Currently, over 80 percent of e-waste flows are not accounted for. The volume of (illegal) transboundary movements of e-waste is estimated to be 7-20 percent. The problem is often framed in terms of dumping of e-waste by the Global North in countries of the Global South. These material dimensions have to be taken into consideration when reflecting on socio-technical imaginaries relating to a digital transformation, and in what ways and to what extent digital technology can be a part of a sustainable future. Democracies need to consider Climate Change and sustainability as key aspects of their long-term existence. These issues also include aspects of global inequalities and power imbalances in regard to resource use, environmental degradation and (global) division of labour. In the workshop, we want to a) provide input on these material dimension of digitalisation and b) discuss socio-technical imaginaries through the lens of sustainability. It will involve a presentation of recycling and e-waste management issues, as well discussions in small groups and a plenary session. These discussions will be on e.g. desires for recycling options and re-design ideas, potential limits to digital technology, or the externalisation of problems. The goal is to raise awareness about sustainability issues relating to digitalisation as well as having an exchange on e-waste and electronic resources - imagining a digital future within planetary boundaries and with regards to other environmental issues.

Addressing e-waste is critical for developing more sustainable technological and material infrastructures of digitalisation and needs to be considered when discussing circular economy and sustainable resource use. We want to contribute to the ongoing debate and research on socio-technical imaginaries by highlighting the necessary dimension of the environmental impact of a digital transformation- (democratic) digitalisation has to take these dimensions into account in order to be beneficial in the long term and in an equitable way.