



AI, BIG DATA & DEMOCRACY TASK FORCE

orbis

KT4D

ITHACA
AI To Enhance Civic Participation

AI4Gov

Trustworthy AI by design:

Insights from the AI, Big Data and Democracy Taskforce

Post Event Report for Joint Webinar



The **HRB – Horizon Result Booster** is an initiative funded European Commission, Directorate General for Research and Innovation, Unit J5, Common Service for Horizon 2020 Information and Data.

 HORIZON
RESULTS
BOOSTER



Trustworthy AI by design: Insights from the AI, Big Data and Democracy Taskforce

WEBINAR

1st October 2024
10:00 - 11:30 (CEST)

[REGISTER NOW](#)



▶ Table of Contents

AI, Big Data & Democracy Taskforce.....	6
Speakers	8
Webinar Introduction	10
Project Presentations.....	11
AI4Gov Project	11
ORBIS Project.....	12
KT4D Project	13
ITHACA Project.....	14
Panel Discussion and Q&A.....	15
Panelists.....	15
Key Takeaways	15
Q&A	16



The event in Numbers



Registrants by Stakeholder

Stakeholder	N° of Registrants
 Researcher/ Academia	42
 Consulting	6
 Legal	4
 Software	9
 Government (Local, State, Federal)	8
 Other	18

Registrants by Country



▶ AI, Big Data & Democracy Taskforce

The AI, BIG DATA and DEMOCRACY TASK FORCE is a cluster project composed of four different EU-funded projects supporting together the European Commission's commitment to "Europe in a changing world - inclusive, innovative and reflective societies". While AI4Gov, KT4D and ITHACA are funded under the Horizon call 'Artificial intelligence, big data and democracy', ORBIS is funded under 'The future of democracy and civic participation', this is a further reason for which each Project provides unique perspectives on approaches and academic disciplines, working to create solutions to foster and safeguard democracy and civic participation against risks and impacts stemming from AI and Big Data. The collaborative effort will result in furnishing policymakers and citizens with tools for evidence-based decision-making while utilising state-of-the-art developments in emerging Information Technologies while also taking into account vulnerable groups and cultural aspects.

AI, BIG DATA & DEMOCRACY TASK FORCE



Taskforce Members



ORBIS aims to bridge the gap between ambitious democratic ideas and collective actions on a large socio-technical scale, fostering inclusive and transparent deliberative democracy in Europe. To bridge the gap between citizens and policy-making, it will shape and support new democratic models developed through deliberative democracy processes.



The **ITHACA** project promotes responsible artificial intelligence (AI) practices aligned with human rights and democratic principles. It assesses AI's potential to enhance citizens' participation in local governance and empower vulnerable groups.



The Knowledge Technologies for Democracy (**KT4D**) project is investigating how democracy and civic participation can be better facilitated in the face of rapidly changing knowledge technologies – such as Artificial Intelligence (AI) and Big Data – to enable actors across society to capitalise on the many benefits these technologies can bring in terms of community empowerment, social integration, individual agency, and improved trust in both institutions and technological instruments while identifying and mitigating potential ethical, legal and cultural risks. By placing cultural studies and humanities at the core of the project we are aiming to build a common ground between the values of participatory democracy and software design.



AI is all around us – in our homes, cars, workplaces and in our pockets. The more pervasive AI becomes, the more important it is to ensure applications are trustworthy. It is just as important to build public trust. In this context, the EU-funded **AI4Gov** project will address the ethical, trust, discrimination and bias issues associated with AI and Big Data.

Speakers



Trustworthy AI by design: Insights from the AI, Big Data and Democracy Taskforce

1st October 2024 WEBINAR
10:00 - 11:30 (CEST)



Jennifer Edmond
Trinity College Dublin,
KT4D Coordinator
MODERATOR



George Manias
PhD candidate at
University of Piraeus



Grazia Concilio
Professor,
Politecnico di Milano



Ilaria Mariani
Assistant Professor,
Politecnico di Milano



Adrian Dragota
Software Developer
at SIMAVI



Aristotellis Spiliotis
System Engineer at
CERTH



Iliana Loi
PhD candidate at
University of Patras



Jennifer Edmond is Professor in Digital Humanities at Trinity College Dublin where she is co-director of the Trinity Centre for Digital Humanities, Director of the MPhil in Digital Humanities and Culture and a funded Investigator of the SFI ADAPT Centre. Over the course of the past 10 years, Jennifer has coordinated a large number of significant funded research projects, including her most recent project on AI, big data and democracy, KT4D. She has served in leadership roles in a number of European-level policy and infrastructure organisations, including six years as a Director and President of DARIAH-EU, four on the European Commission's Open Science Policy Platform, and her current role as a member of the Governing Board of the European Association of Social Sciences and Humanities (EASSH). Her research explores interdisciplinarity, humanistic and hybrid research processes, and the emergence of critical digital humanities as a contributor to both research and technology development.



George Manias is a Computer Engineer with a Masters in Big Data and Data Analytics. He received his first degree from the Department of Computer and Informatics Engineering, University of Patras, Greece, and his Masters in Big Data and Data Analytics from the Department of Digital Systems, University of Piraeus. Since 2020, he is a PhD candidate at the University of Piraeus (Department of Digital Systems) with a main research focus on the implementation of multilingual categorization systems with a particular emphasis on the application of transfer learning techniques. His general research interests are Natural Language Processing (NLP), Multilingual Systems Development, Machine Translation, Sentiment Analysis, and Data Mining and Interoperability. In this context, he has participated in various European and National projects (e.g. PolicyCLOUD, iHelp, beHEALTHIER, AI4Gov), while he has also been the main project coordinator in some of them (e.g. iHelp, COMFORTage). The main subjects of his research activities are dealing with issues of multilingualism, interoperability and more general processing and analysis of data, with parallel demonstration of various publications, presentations, and participation in research discussions both in International Conferences and in International Scientific Journals.



Grazia Concilio, PhD. She is an engineer and Full Professor in Urban Planning and Design at DASTU; PhD in “Economic evaluation for Sustainability” from the University of Naples Federico II. She carried out research activity at the RWTH in Aachen, Germany (1995), at IIASA in Laxenburg, Austria (1998) and at the Concordia University of Montreal, Canada, (2002); she is reviewer for many international journals and member (in charge of LL new applications) of ENoLL (European Network of open Living Lab). Collaborating on and or coordinating different research teams: responsible for a CNR research program (2001); coordinator of a project funded by the Puglia Regional Operative Programme (2007–2008), responsible of the POLIMI team for the European project Periphèria (2010–2013), MyNeighbourhood (2013–2015) and Open4Citizens (2015–2018). Responsible for the Politecnico di Milano unit for the Horizon 2020 projects: Designscapes (2017–2021), Polivisu (2017–2020). Coordinator of the H2020 EASYRIGHTS (2020–2022), and co-coordinating the HE projects ORBIS (2023–2026).



Ilaria Mariani, Ph.D., is an Assistant Professor at the Department of Design, Politecnico di Milano, with a long-standing experience in the study of complex systems for communication and their evaluation. Her work had a consistent focus on games and interactive artefacts for social change and innovation. Over the years, her research has increasingly entered on design-driven innovation within the public sector, where she explores how design can effectively support digital transformation and systemic change. On these topics, she actively participates in the international debate and research projects, including the HEU ORBIS and OPENVERSE, the DG CNECT GovTech, the H2020 SISCODE and easyRights, the CEF AI4GOV, the ESPON DIGISER. She is a member of the Editorial Board of G|A|M|E, the Italian Journal of Game Studies, is a founding partner and vice-president of Digital Game Research Association (DiGRA) Italia, and member of its Steering Committee.



Adrian Dragota (SIMAVI) 5 years of experience working as a Software Developer, participating in all stages of application development (specifications engineering, design, development, maintenance). Primarily, I focused on integrating various tools developed by partners across projects, while ensuring that user interfaces that we built were intuitive and easy to use. SIMAVI Software Imagination. Familiar with JavaScript, jQuery, Ionic, Thymeleaf, Bootstrap, Keycloak, Elasticsearch, Kibana, Logstash, Filebeat, Microsoft SQL Server, MongoDB, RabbitMQ.



Aristotelis Spiliotis (CERTH), Civil Engineer, holds a MEng in Structural Engineering and an MSc in Analysis and Design of Earthquake Resistant Structures. He has been involved for many years in the field of Design & Analysis of numerous structural frameworks while having developed advanced modelling and parameterisation skills to a large number of relevant analysis software. His research interests continued at CERTH, Hellenic Institute of Transport since 2017, where he leveraged this experience in the field of transport and specifically in the computational engineering analysis of safety system, while participating in several EU projects, mainly concerning the stages of analysis, specification setting and assessment of technological solutions, user-oriented applications and services for road and mobility safety.



Iliana Loi is a Ph.D. candidate at the Department of Electrical and Computer Engineering (ECE) of the University of Patras and a research assistant at the Visualization and Virtual Reality Group in the ECE since 2019 working on EU and national research projects. She obtained her Bachelor's degree from the Computer Engineering and Informatics Department of the University of Patras in 2018 and her Master's in Biomedical Engineering in 2020. Her research interests involve machine learning, computer animation, musculoskeletal modelling, and biomechanical simulation.

Webinar Introduction

The Trustworthy AI by design webinar was organised as part of a HSBooster service recommendation to present research from the AI, Big Data, and Democracy Taskforce. These projects work in synergy to support the European Commission's vision of fostering inclusive, innovative, and reflective societies. Together, these projects offer diverse approaches and academic insights aimed at safeguarding democracy and civic participation against the challenges posed by AI and big data. The presentations during the event showcased their collaborative efforts to equip policymakers and citizens with advanced tools for evidence-based decision-making, considering the latest advancements in information technologies, while also addressing the needs of vulnerable groups and cultural contexts.



Project Presentations



AI4Gov Project

Speakers



George Manias,
PhD candidate at the University of Piraeus

Overview

The AI4Gov presentation begins by addressing how AI & Big Data make the world go around, but they come with challenges and problems. AI4Gov seeks to combat threats by building on existing applicable laws and regulations, removing bias by design, providing easy-to-use and trustworthy policies and safeguarding the fundamental elements of human rights & democratic values in the development and application of AI.

Key Points

- ▶ The use of AI in decision-making requires transparency, trustworthiness and fairness to avoid bias, inequality and discrimination.
- ▶ Different types of bias are incorporated in the overall Data and AI lifecycle, ranging from data collection and data processing, to the implementation of the AI algorithms themselves and the operations.
- ▶ Ethical aspects of AI and how to mitigate them to foster trust & transparent AI: regulatory frameworks to protect citizens' rights and ensure transparency; strict measures to protect personal data; provide transparency in decision-making algorithms; integration of human and AI for optimal results
- ▶ AI4Gov introduces Trusted AI solutions in decision-making
 - Holistic regulatory framework
 - Policy-oriented visualisation workbench
 - eXplainable AI Library
 - Data Governance Framework
 - Bias Detection & Mitigation
- ▶ Integrated platform that is modular, flexible, resilient and scalable, providing final results and policies governed through the blockchain architecture.
- ▶ Citizens benefits: transparency, increased trust and engagement, access and inclusive participation, training and professional development of public servants, service and process improvement in public institutions and enhanced accessibility & inclusivity

Speakers



Grazia Concilio, Full Professor,
Department of Architecture and Urban
Studies, Politecnico di Milano



Ilaria Mariani, Assistant
Professor, Department of
Design, Politecnico di Milano

Overview

ORBIS deals with creating a supportive environment enhanced by AI to test whether we can improve deliberative democracy, and scale its models. The presentation goes into detail on the ORBIS process, specifically how to engage multi-stakeholder ecosystems for informing technologies that support participation. It details how human supervision is included in the loop, how communities of practice contribute with their needs to feed technological requirements in existing democratic deliberation platforms and informs components of the ORBIS toolkit.

Key Points

- ▶ **Deliberation and open challenges.** Challenges include the lack of inclusive democratic ecosystems, institutionalised participatory initiatives, failure to meet user expectations, and misalignment between democratic needs and technologies for participation.
- ▶ **Trustworthy AI-enhanced democratic deliberations.** ORBIS employs a 'trustworthy by design' approach to the development of processes and technologies. This approach implies the continuous engagement of diverse expertise to ensure continuous attention to data, adherence to ethical considerations surrounding the use of AI, and the effective, responsible engagement of the public. This approach aims to build trust and transparency at every stage of deliberative democracy enhancements.
- ▶ **Co-creation and co-design processes to inform solutions and models.** Description of the co-creation and co-design iterative processes developed to better understand and address existing needs, leveraging firsthand knowledge from organisations that conduct deliberations (engaged as pilot sites for experimentation) and multidisciplinary expertise within the consortium. To enhance the trustworthiness of ORBIS's technological solutions, the project has established an ethical task force dedicated to privacy, data protection, and explainability.
- ▶ **Experimentation.** Six use cases have been selected for piloting AI-enhanced tools, methods, and processes for deliberative democracy.
- ▶ **Pilots activities and practices.** Activities of organisations designing and operating democratic deliberations are thoroughly mapped to better understand how technology can enter the loop and be adapted to aid their practices.
- ▶ **Scaling perspectives.** Design tools such as ecosystem map and process map are used to gather knowledge. They serve as boundary objects to co-design with pilot organisers and representatives of their ecosystems. The objective is generating comprehensive views of their deliberative processes and exploring potential scaling directions.
- ▶ **Technology and iterative loops.** It is crucial to identify the real needs of organisations putting in place democratic deliberations, both explicit and latent, and their associated technological requirements to inform the development and implementation of tools that better support activities.

Speakers



Jennifer Edmond,
 Professor, Trinity College Dublin & KT4D Coordinator

Overview

An expansive conversation on KT4D's culture-centred approach to AI "trustworthiness" in the context of democratic exchange.

Key Points

- ▶ **Setting the scene.** Fundamental KT4D understanding is that the relationship between AI, big data and democracy is mediated by culture.
- ▶ Concepts of trust, trustworthiness and responsibility are culturally determined.
- ▶ **Influencing factors on democracy & civic participation.** Culture is a distributed control, flexible and adaptable over time and perceived as part of identity. Technology development is centralised control. It is fast-changing rather than adaptable and perceived as a consumer choice. Controls, or efforts that maximise benefits without bias, between them.
- ▶ **Dangers of 'technosolutionism' or solving technological problems with more technology.** Work to balance the introduction of AI and big data, while supporting humans as actors and agents in their own democratic processes.
- ▶ **Human and system interactions.** Identify the mediating layers between the human and culture relationship versus the human and technology connection. Culture has the ability to adapt to technological change, meaning they have a co-creating relationship with one another.
- ▶ **Democracy in the Loop.** Very difficult. Ideas built into systems are traditionally about efficiency and output. However, Democracy is inherently in a state of flexibility, with various actors seeking to negotiate and compromise to develop over time.
- ▶ Trustworthiness leads to overconfidence in system function with the all-important social risk-taking of interpersonal trust.
- ▶ **Digital Democracy Lab as an Experience.** Where friction is useful, maintain friction in the discussion of democracy to ensure user feedback into the system.



ITHACA
AI To Enhance Civic Participation

ITHACA Project

Speakers



Adrian Dragota,
Software Developer,
SIMAVI



Aristotelis Spiliotis,
System Engineer,
CERTH



Iliana Loi,
PhD candidate at
the University of
Patras

Overview

An explanation on the aim of ITHACA to develop a trustworthy AI platform to facilitate civic participation in the democratic processes of the project, which is influenced by various technical, user and societal aspects.

Key Points

- ▶ **Step 1.** Process begins with identifying key user needs leading to the project's Use Cases through questionnaires and workshops with all relevant stakeholders to serve as Proof of Concept for the platform.
- ▶ **Step 2.** Identify the functional and technical requirements - divided into 9 requirements based on the technical work needing to be done, as well as the evaluation and assessment.
- ▶ **Step 3.** Identify and develop software and hardware components to carry out identified functions based on how they interact and supervise one another.
- ▶ **Hybrid System Architecture.** ITHACA platform leverages modular design principles and integrates scalable Microservices and Event-Driven Messaging to adapt to varying workflows.
- ▶ **AI tools for trustworthiness.** Development of three supportive tools (AI Fairness Tool, PPML, AI Cybersecurity tool) applied alongside AI-based civic participation systems to evaluate the latter in terms of Fairness, Security and Privacy.

Panel Discussion and Q&A

Panelists

 Jennifer Edmond

 George Manias

 Grazia Concilio

 Ilaria Mariani

 Adrian Dragota

 Aristotelis Spiliotis

 Iliana Loi

Key Takeaways

- 1. Feedback loops:** Introduce technological frameworks that are flexible and resilient, capable of integrating diverse technical, ethical and societal procedures to respond to and support democratic processes and user civic participation.
- 2. Layers of Trustworthiness:** Each project focused on the multi-faceted components underpinning trustworthy AI, specifically the importance of privacy, data protection and explainability to meet user expectations and comply with ethical standards.
- 3. Value of project synergies & collaboration:** Consortium efforts and similar, collaborative knowledge sharing activities, bring visibility to internal project achievements, reinforce ethical concerns and foster innovation in a rapidly evolving landscape. Coordinate joint action communication practices introducing trustworthy AI technologies to facilitate democracy and civic participation.

Q&A

Q: How can we create the bridge between the work that we do and policymakers?

A: (George Manias / AI4Gov) We have to follow three different aspects of how we can impact and benefit policymakers. The first aspect is the societal - increase their awareness, digital literacy and digital capacity in order to adopt the new technologies. If we do not train and educate then we will fail to promote the results from the utilisation of AI solutions. Moreover, we have to provide the enhanced explainability results of high-end solutions that are easy to understand. The third aspect is to regulate the overall utilisation of the AI solutions. We need to showcase that we have taken into consideration different laws and legislations and everything has been developed in alignment with these regulations to foster overall trust and reliability with what we are developing.

Q: Expand on the overall value and importance of explainability

A: (Iliana Loi / ITHACA) In order to render AI systems trustworthy, there are some principles in which they should adhere, like fairness, security, trustworthy and robustness. However, there are also ways to evaluate the explainability of AI systems that run on the ITHACA Platform. One of those ways is to use explainable AI tools. We created a toxicity detection tool that classifies posts and comments from the ITHACA Platform as being toxic or not toxic. We implemented a highlighting mechanism that highlights posts in green to red to showcase their level of toxicity. Similar highlighting mechanisms exist as well in popular literature.

Q: Is there a common definition of explainability?

A: (Aristotelis Spiliotis / ITHACA) Explainability is becoming something more than what it is now. It can be a way to describe how a system is functioning or to provide a disclaimer. Now, with the development of generative AI we are moving towards a collective intelligence and explainability is being tasked to do more - to examine and weigh the different intelligence systems and provide an integrated and collective result. Explainability has a big future and potential to expand.

Q&A

Q: Can you elaborate on your underlying conceptualisations of trustworthiness?

A: (Ilaria Mariani / ORBIS) We maintain a human-in-the-loop approach so we do not leave unsupervised action, especially when we have reporting summarisation done by AI or huge when we have huge sets of data coming in and we need to take something out of that. Trustworthiness is not just about data protection, privacy or ethics in general, but also the meaning, as AI does not have the sensibility to build a heterogenous, multi-voice narrative that we could. ORBIS specifically keeps the human-in-the-loop through those who are running the deliberation activities, with the responsibility to code AI the direction, bring back the results, and see what is produced before sharing with the public.

Q: Can you provide concrete examples of the measures (technical, legal, or ethical) that we could use to comply with Eu ethical and legal standards? What are the difficulties in implementing these measures?

A: (Jennifer Edmond / KT4D) We want to build these systems because we are worried about them and to ensure our scepticism goes into a prototype of this system. If you are approaching this build from the position of a researchers' level of ethics, it can be very difficult indeed. Access to data can become difficult indeed. Protecting your participants can become difficult indeed. Protecting the privacy and dignity of the democratic processes can become difficult indeed. We, specifically in KT4D, have integrated a partner with legal expertise in our project and they have been there for us to open up that perspective. For example, when we were deciding how to handle our participant data, they created a useful FAQ guidance document for the project on how we would use pseudonymisation and what is legal and ethical.

For further details or to get involved in these projects,
please visit their websites:



kt4democracy.eu



orbis-project.eu



www.ithaca-project.eu



ai4gov-project.eu

This webinar was organised with support from:

www.horizonresultsbooster.eu

Report prepared by: Nathaniel Cueter (Trust-IT Services)