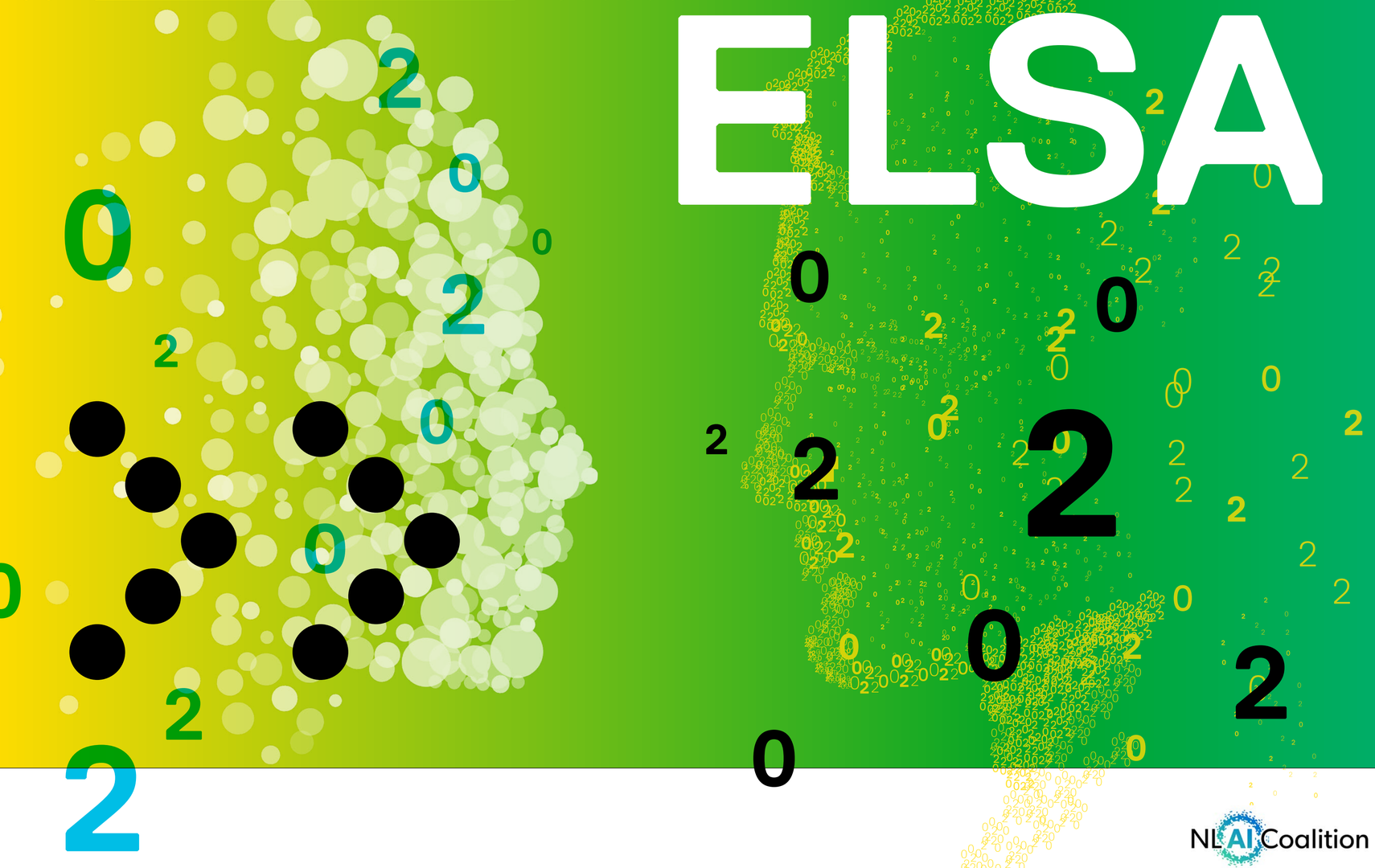
2ND EDITION

METHODOLOGY



ELSA Labs Magazine

Ethical, Legal and Societal Aspects of AI

Promoting human values in AI: enhancing, not undermining. Discover how ELSA Labs are conducting pioneering research of AI's societal and ethical impacts. By engaging citizens and experts, the Labs create methods to address and set boundaries for AI use, ensuring responsible, human-centred innovation in AI. In this second edition of the ELSA magazine, our methods are the focus theme.

GET INSPIRED

NL AI Coalition
Brightlands
NWO
Ministerie van Binnenlandse Zaken en Koninkrijksrelaties

ELSA Labs

A selection of the ELSA Labs on the map is featured in this magazine. You can read more about the full portfolio of ELSA labs on page 45.

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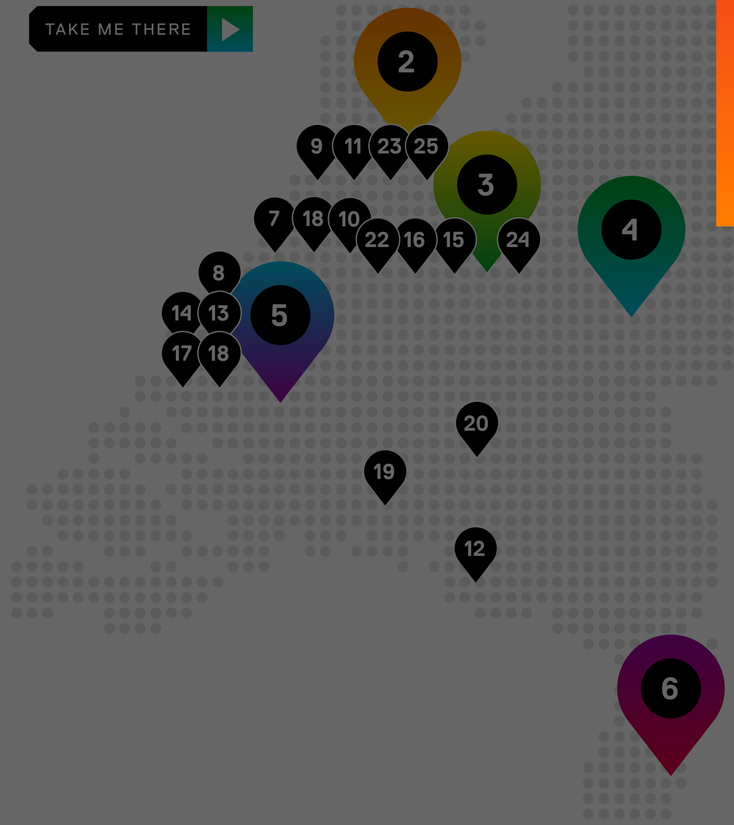

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ELSA AI Lab Northern Netherlands

Location	Groningen
Area of subject	Health & Healthcare
Project lead	UMC Groningen
Sustainable Development Goal	3 GOOD HEALTH AND WELL-BEING

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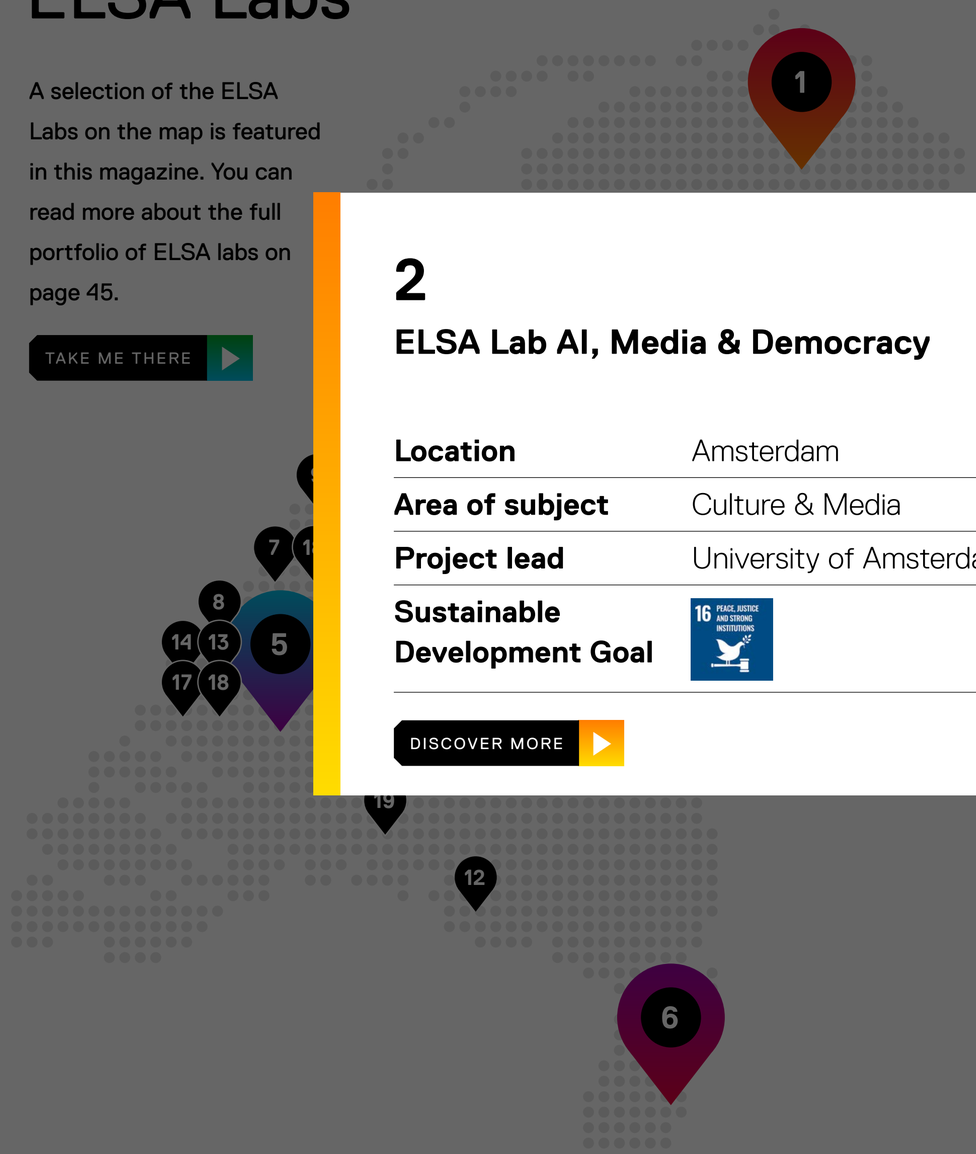

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ELSA Lab AI, Media & Democracy

Location	Amsterdam
Area of subject	Culture & Media
Project lead	University of Amsterdam
Sustainable Development Goal	16 PEACE, JUSTICE AND STRONG INSTITUTIONS

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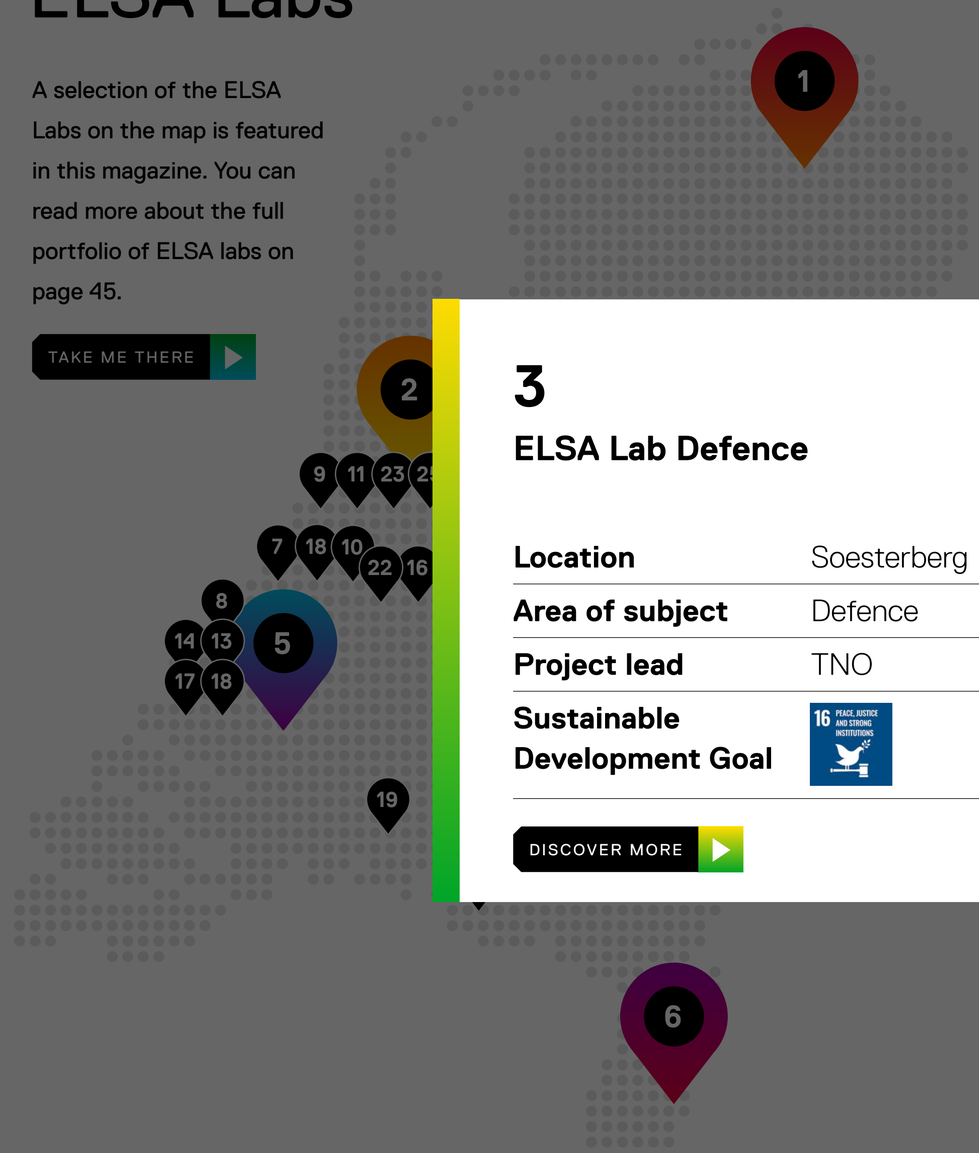

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ELSA Lab Defence

Location	Soesterberg
Area of subject	Defence
Project lead	TNO
Sustainable Development Goal	16 PEACE, JUSTICE AND STRONG INSTITUTIONS

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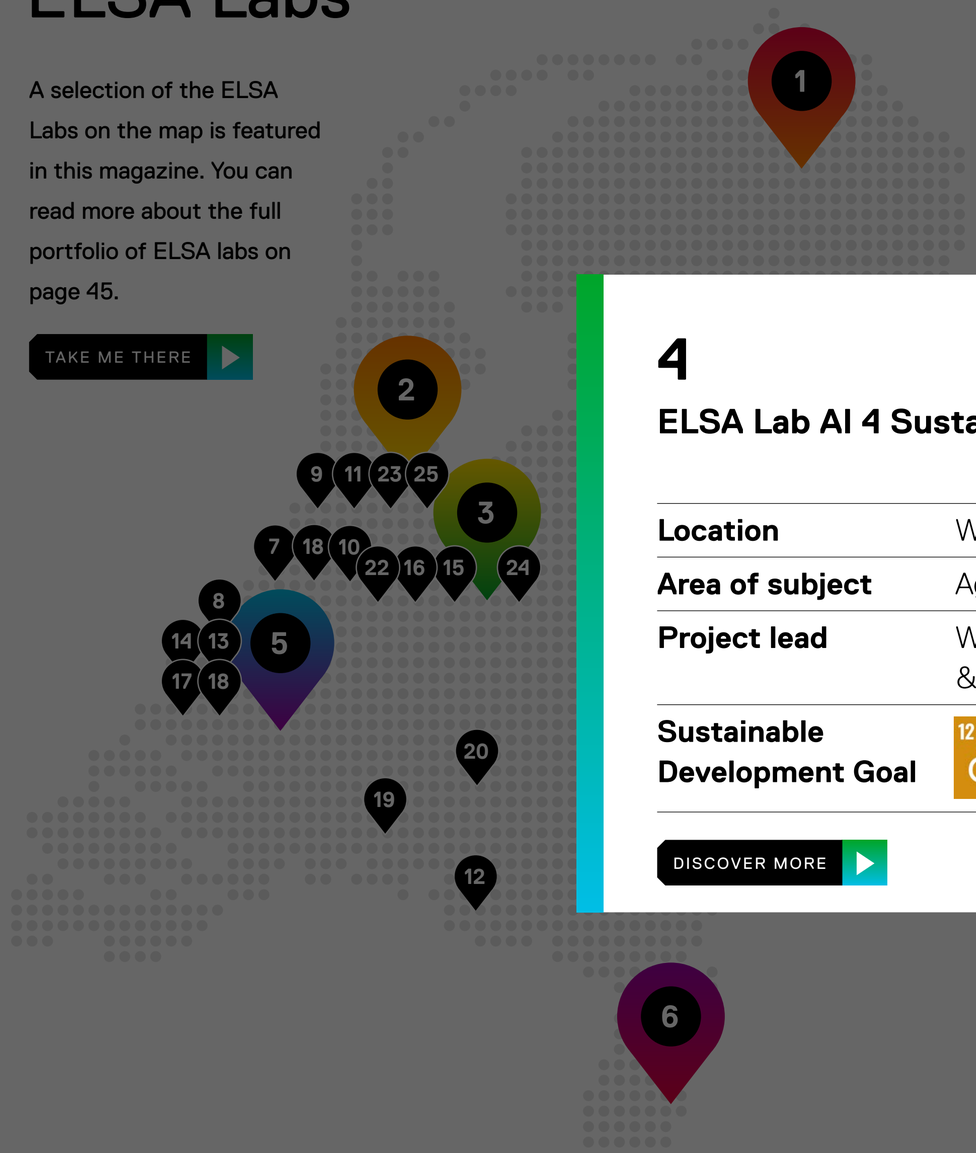

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ELSA Lab AI 4 Sustainable Food Systems

Location	Wageningen
Area of subject	Agriculture and Food
Project lead	Wageningen University & Research
Sustainable Development Goal	12 RESPONSIBLE CONSUMPTION AND PRODUCTION

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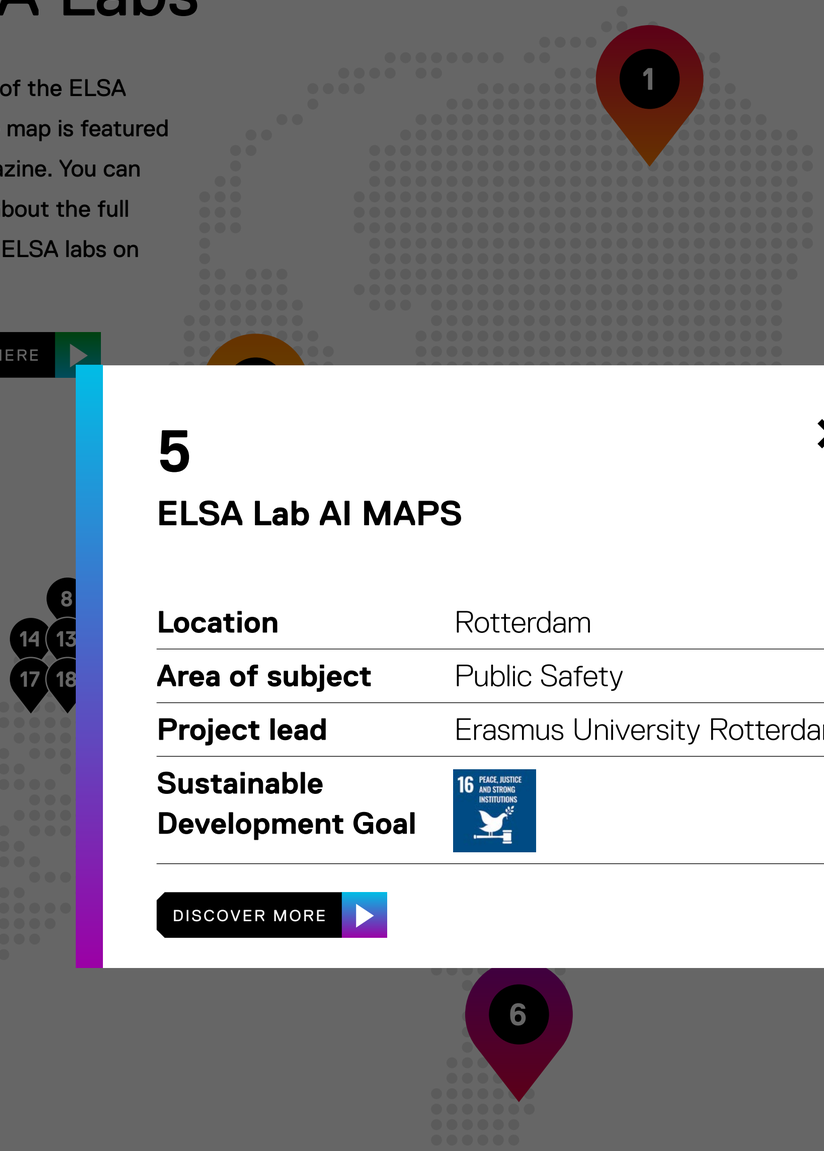

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ELSA Lab AI MAPS

Location	Rotterdam
Area of subject	Public Safety
Project lead	Erasmus University Rotterdam
Sustainable Development Goal	16 PEACE, JUSTICE AND STRONG INSTITUTIONS

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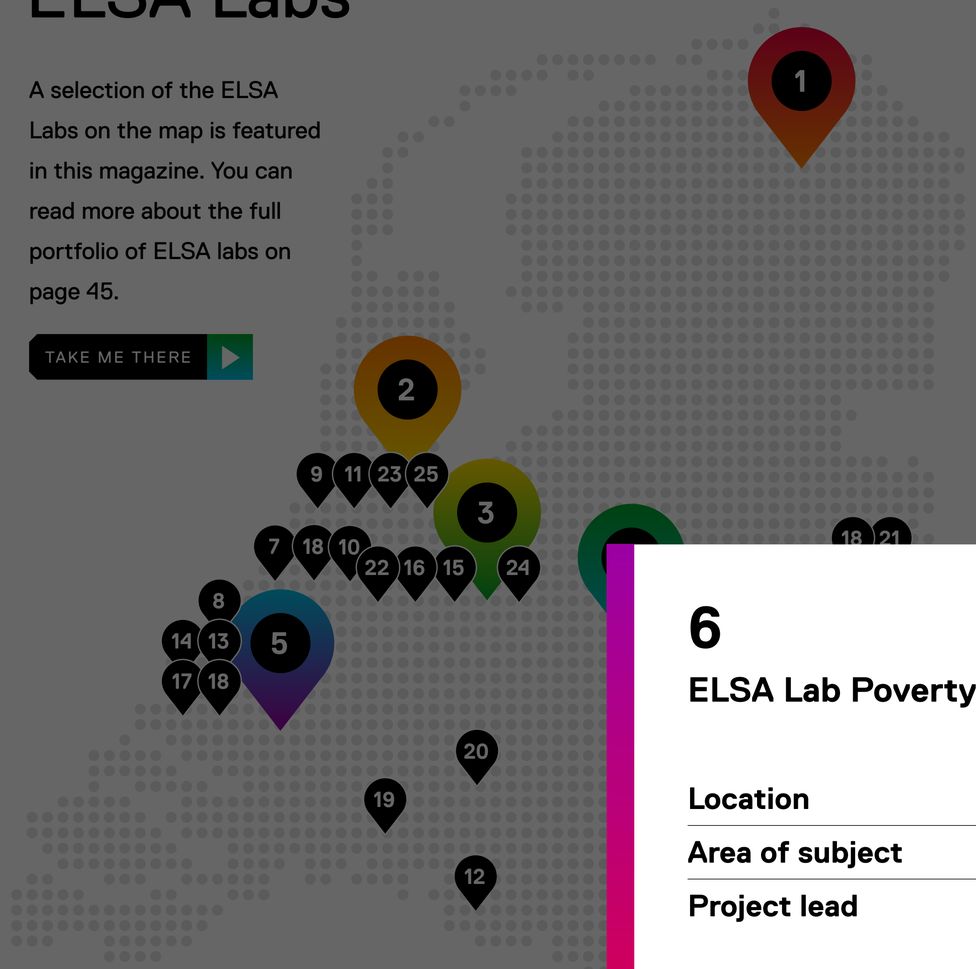

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ELSA Lab Poverty & Debt

Location	Heerlen
Area of subject	Public Services
Project lead	Brightlands Smart Services Campus
Sustainable Development Goal	1 NO POVERTY

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Is the sky really the limit?

BY MIRJAM PLANTINGA

AI technologies have been around for years, but recent breakthroughs in enhancement of computing power, quantities of data and innovative algorithms have given its development an enormous boost. Although the use of the technology seems very promising and, in terms of application, the sky is the limit, AI does not always live up to its promise and can come with unforeseen consequences...

This magazine

In this edition of the ELSA magazine, we will showcase the ELSA approach, our community and our research. The magazine will give you firsthand insights into the work we're doing and the challenges we're facing. ELSA approaches and methods vary widely and this magazine describes different approaches and methods at various ELSA Labs. You will also meet our researchers and staff. By informing you as a reader about our approaches, methods and findings, we hope to facilitate a discussion on the importance and practice of ELSA research and take meaningful first steps in bringing our research to practice.

Happy readings,
Mirjam Plantinga
Projectleader ELSA Labs network project

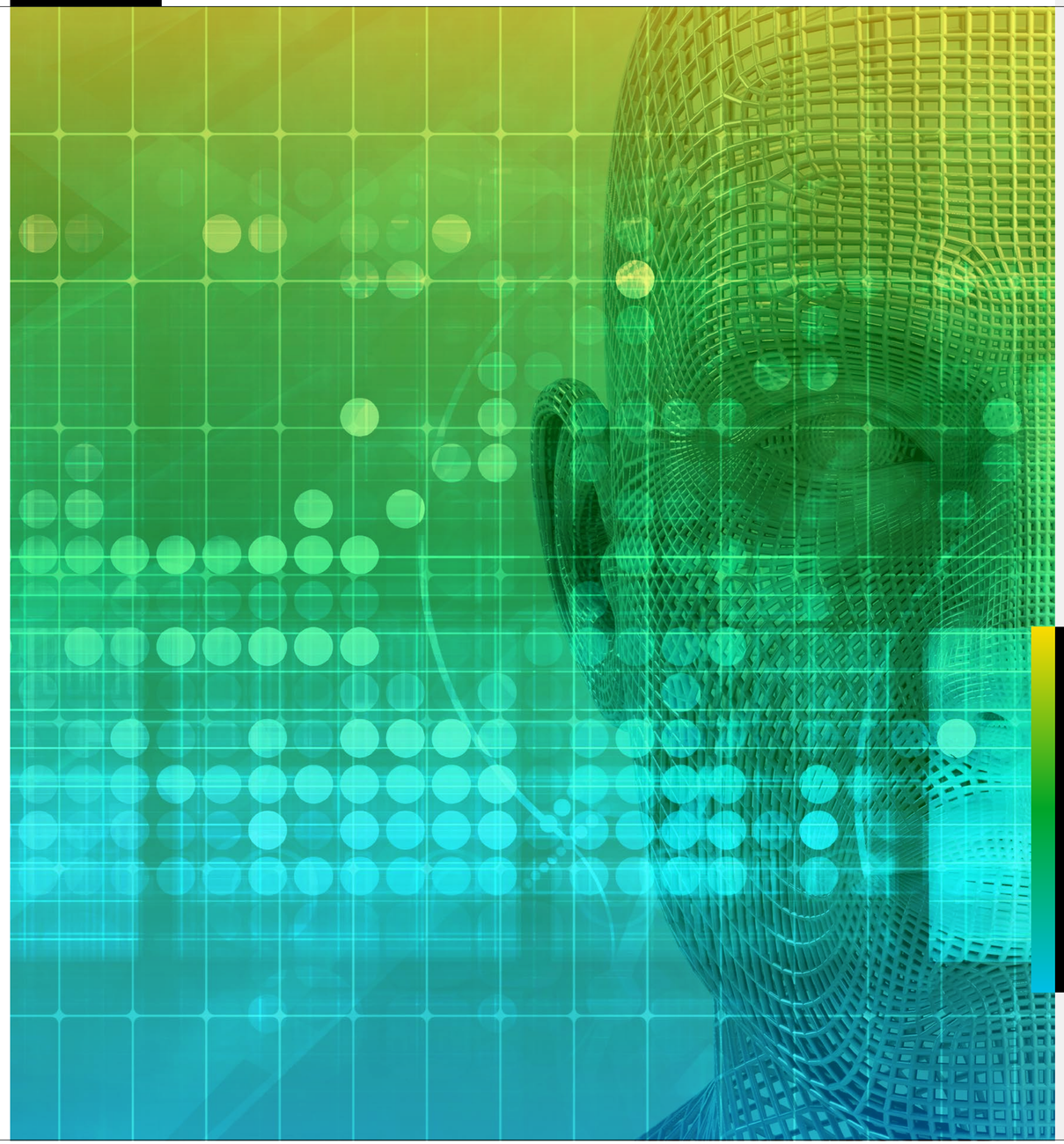
Contact Mirjam
m.plantinga@umcg.nl

Studying AI in practice

ELSA Labs can be physical locations, virtual research communities or collaborative endeavours of researchers, corporates, citizens and governments working together on a societal issue. They study AI in context, in order to come up with new methodologies and ethical practices for its development and use. Among other things, we as researchers ask ourselves: should the sky really be the limit in AI? The Labs are co-creation environments designed to stimulate the responsible development and the ethical implementation of AI. They explore, study, explain and shape different AI use cases. ELSA Labs investigate the chances, but also the risks and challenges of AI development and implementation. They also develop theoretical approaches, frameworks and practical tools to translate theory and principles to practice.

Responsible AI development in The Netherlands

The use of AI can go together with unforeseen consequences, such as bias and discrimination against certain groups, resulting in unequal distributions of benefits. In order to safeguard human and public values, a responsible development and use of AI is irreplaceable. In the Global Index on Responsible AI, responsible AI is defined as *'the design, development, deployment and governance of AI in a way that respects and protects all human rights and upholds the principles of AI ethics through every stage of the AI lifecycle and value chain. It requires all actors involved in the national AI ecosystem to take responsibility for the human, social and environmental impacts of their decisions'*. The Netherlands can proudly say that they rank number 1 in this Global Index! One of the reasons for receiving this position is the existence of ELSA Labs.



ELSA explained

Chat GPT, Copilot, Gemini... there are many ways in which the swift development of AI impacts our lives on a daily basis. ELSA Labs dive into the societal and ethical consequences of these developments, crafting methods to explore both its chances and its risks. By engaging citizens and experts, they drive responsible, human-centred AI advancements.

From policy ideal to practice

BY VINCENT BLOK

Our focus is now on creating a blueprint for developing human-centred and ethical AI. But this was not always the case. At the start, ELSA Labs were a mere policy ideal. The idea was to provide an innovative context to explore ethical, legal and societal aspects of AI in the early stages. In 2021, this policy ideal developed into the NWO funded ELSA Labs program.

When exploring side effects is no longer enough

AI developments raise all kinds of legitimate concerns that have to be addressed in responsible and human-centred AI. It is important to look at the actual ethical, legal, and societal issues that emerge. Yet, we felt this was not enough.

A couple of years ago, we realized it was time to take our research a step further. We began to ask different questions: *How can engineers who are involved in AI development effectively become aware of these ethical, legal and societal aspects? How can they learn to act upon them, in colLaboration with multiple stakeholders? What mechanisms enable designers to address societal concerns raised by AI? And what hinders them?*

Over the years, our research ambition evolved into developing an evidence-based methodology to integrate societal considerations in AI design. Now, in 2024, ELSA Labs research the mechanisms that drive or hinder the adoption of societal concerns in AI design. They develop interventions to stimulate responsible and trustworthy AI, and consider sector- or domain- specific factors that drive or hinder ethical and societal practice.

Creating a new Methodology

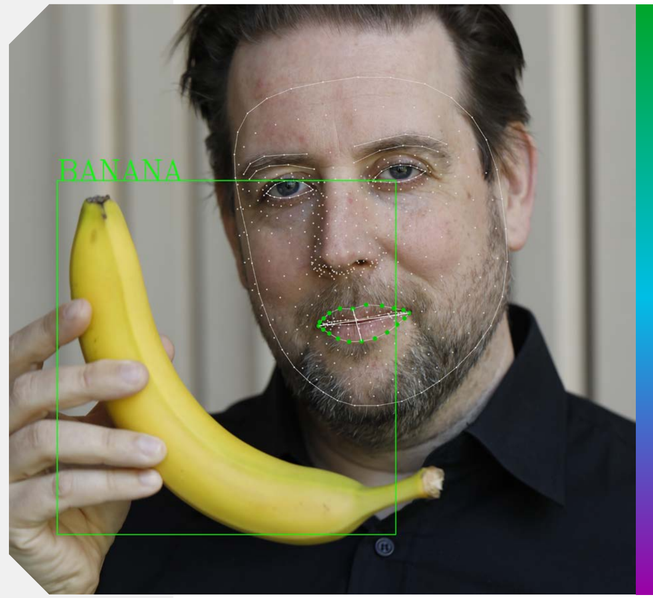
In our effort to craft a new methodology, we build on existing research in the domain of *Ethics of Technology, Science and Technology Studies (STS)* and *Responsible Research and Innovation (RRI)*, amongst others. Especially the field of RRI is fruitful for ELSA research. It provides conceptual frameworks to identify the societal impact of AI based systems, anticipate future consequences and reflect on ELSA issues, but also provides evidence-based mechanisms and tools to assess the ELSA aspects of AI based systems in practice and in colLaboration with quadruple helix stakeholders.

Our research is inherently interdisciplinary, holistic and combines methods. Building on existing knowledge and practices, the ELSA Labs develop new methodologies for their contexts. In this way, they contribute to new evidence-based methodologies for AI research. The Labs are pioneers in future ethical developments in AI.

From left to right: Mark Neerincx (ELSA Lab Defence), MP (ELSA AI Lab Northern Netherlands), Karthik Venkatraj (ELSA Lab Media and Democracy), Gabriele Jacobs (ELSA Lab AI MAPS), Darian Meacham (ELSA Lab Poverty and Debt), and Vincent Blok (ELSA Lab AI4SFS).

Why ELSA methods are important

The ELSA Labs adopt an interdisciplinary methodology. The following interview with Guido Camps from the Hungry Robots Lab at Wageningen University, part of the NWO-funded ELSA Lab AI for Sustainable Food Systems, highlights why this approach is so important for assuring ethical, societal and legal values in technical developments.



Guido Camps, *Senior Researcher at Wageningen University, works on technology and nutrition research at Wageningen University. His current project involves creating a smart tray that tracks eating rates by measuring weight changes. The tray uses machine vision to analyse eating behaviour. The tray could have significant implications for health monitoring and dietary studies, yet it's vital to develop it responsibly, considering ethical, legal, and societal aspects (ELSA), alongside technological advancements. And this is exactly what the ELSA Lab allows for.*

How do ELSA methods influence your work?

'ELSA methods are fundamental in our development process. We collaborate with ethicists, philosophers, and legal scholars to anticipate potential societal impacts and to address them proactively. This interdisciplinary approach ensures that our technologies are designed and implemented in ways that align with societal values and comply with regulations like the GDPR and the new EU AI Act.'

'Together, we're striving to create technology that is not only advanced but also ethically sound and socially acceptable!'

Can you elaborate on the interdisciplinary nature of your research and the challenges and benefits this brings?

'Interdisciplinary research is at the heart of our work. Blending the hard sciences with the social and human sciences allows us to approach problems from multiple perspectives. For example, Florian Walter, a PhD student, is focusing on the engineering aspects of the smart tray, while Luuk Stellinga is examining its ethical implications. This collaboration helps us create a well-rounded product that is technically sound and ethically robust. Yet, integrating different disciplines can be challenging due to differing methodologies and terminologies. Effective communication and a shared vision are key to overcoming these hurdles.'

What findings have you uncovered so far in your research?

'Our research has yielded several important insights. We've identified key ethical concerns related to data privacy and user consent, which are critical for compliance with the GDPR. This can have downstream engineering effects, such as where and how we store the data: locally, in the cloud or not at all. We've also explored the societal impact of monitoring eating behaviours, which highlighted the need for transparency and user education to build trust. These findings underscore the importance of ongoing dialogue between technologists and societal stakeholders.'

'ELSA-style research is surely vital in ensuring that AI and data science innovations benefit society as a whole. The interdisciplinary methods promote responsible development in AI technology. And I'd like to give a special thanks to our PhD students, Florian Walter and Luuk Stellinga, whose contributions are invaluable to our project. Together, we're striving to create technology that is not only advanced but also ethically sound and socially acceptable!'

ELSA community

ELSA Labs Methodology Conference

Building bridges for ELSA research

On June 13th 2024, the ELSA Labs Methodology Conference took place in Wageningen. The conference aimed to foster exchanges among the ELSA Labs to stimulate mutual learning and to build an ELSA community. Designed to spark mutual inspiration and learning, the event featured a mix of presentations and interactive workshops.

BY VINCENT BLOK

Sparking inspiration and tackling common challenges

In the morning, PhD candidates and post-doctoral researchers took the stage to share their latest findings. These sessions went beyond presenting data; they ignited conversations, generated ideas, and facilitated peer-to-peer learning. The energy in the room was palpable as researchers delved into the intricacies of their work, inspiring their peers with new perspectives and approaches.

The afternoon was dedicated to hands-on workshops addressing common challenges in ELSA research. These workshops harnessed the collective expertise and wisdom of the emerging ELSA research community. One pressing challenge discussed was the tendency of ELSA Labs to focus narrowly on ethical, legal, and societal aspects at the level of specific applications, such as privacy or transparency in decision support systems.

An ecosystemic ELSA approach

During the workshops, participants explored how to develop a holistic, ecosystemic ELSA approach. It was heartening to see engineers, private sector actors, and ELSA researchers alike recognize the need to address structural issues and engage in collaborative problem-solving.

A conclusion was that societal concerns about AI are much broader than thought at first, encompassing issues like surveillance capitalism, the deskilling of the workforce, the market power of BigTech, and the existential implications of life in a digital world. Recent research indicates that those involved in AI design also experience broader structural issues. For ELSA Labs to genuinely contribute to responsible and trustworthy AI, they must expand their focus beyond micro-level concerns and address these broader socio-political challenges.

Building bridges for ELSA research

The event succeeded in creating an inclusive atmosphere where every voice was heard, and genuine interest in each other's work was evident. New connections were forged, and researchers from different Labs found common ground and potential for future colLaboration.

As engaged scholars, we are thrilled to be part of this growing community of ELSA researchers in the Netherlands. The Wageningen event was a testament to the power of colLaboration and the importance of addressing both the micro and macro aspects of AI's impact on society. It was a day filled with learning, sharing, and the collective pursuit of making AI more responsible and trustworthy!

> *'As engaged scholars, we are thrilled to be part of this growing community of ELSA researchers in the Netherlands.'*

As we transition to the individual Lab chapters, each Lab is given dedicated space to describe their unique methods and specific parts of their research. This section highlights the work of PhDs and postdocs, showcasing their contributions and findings from the conference. These chapters not only present the researchers' insights but also provide a deeper understanding of their methodologies and the broader impact of their work within the ELSA framework.

1 ELSA AI Lab Northern Netherlands

AI in healthcare

We all know Google is not the best place for a good diagnosis yet. But what if, in a couple of years, AI can replace your GP? By investigating the Ethical, Legal and Societal aspects of the use of AI in different health related decision-making contexts ELSA-NN aims to foster the knowledge, development and implementation of trustworthy human-centred AI in health care.

3 GOOD HEALTH AND WELL-BEING

1.1 The Lab

Promoting healthy living with ethical AI

The ELSA AI Lab Northern Netherlands is dedicated to fostering healthy living, working, and ageing through the development and implementation of trustworthy, human-centred AI in healthcare. ELSA AI Lab Northern Netherlands investigates the ethical, legal, socio-political, and psychological aspects of AI in various decision-making contexts and integrates this knowledge into an online ELSA tool. This tool is designed to guide stakeholders through the complexities of AI development and deployment, ensuring ethical and responsible use.

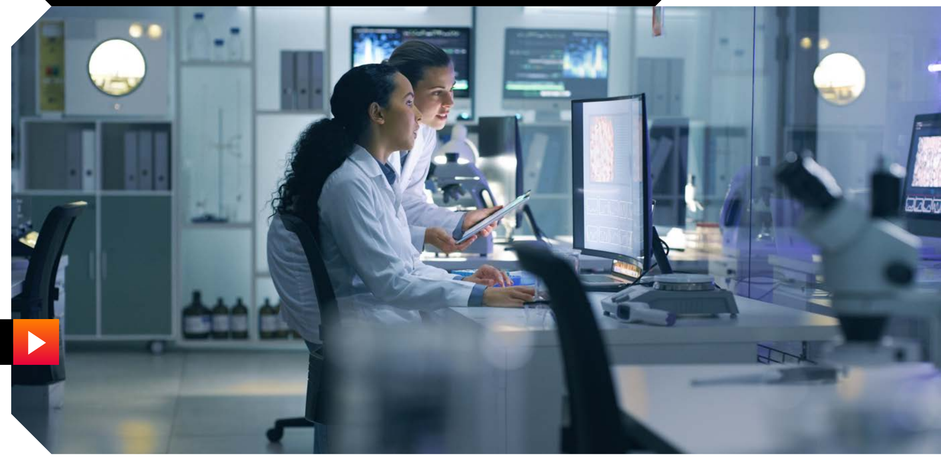
A virtual consortium with real-world impact

ELSA AI Lab Northern Netherlands operates as a virtual research consortium within the Data Science Center in Health (DASH) at the University Medical Center Groningen (UMCG). Comprising over 20 researchers from UMCG, the University of Groningen, and Hanze University of Applied Sciences, the consortium collaborates with societal, business, and international partners, as well as patient and public organizations. Despite the challenge of being dispersed across various locations, the whole team meets in person twice a year and regularly convenes in subgroups and online to advance the research conducted in different work packages. Also a patient and public advisory board is installed which meets four times a year and functions as a sounding board for all ELSA AI Lab Northern Netherlands research. Strong regional collaborations have been vital for conducting joint projects, engaging stakeholders, and securing follow-up funding, underscoring the importance of community and partnership in advancing responsible AI.

Focused research and innovative methods

ELSA AI Lab Northern Netherlands' research is centred around three key concepts essential for trustworthy AI: **availability**, **use**, and **performance**. These are explored through four use cases involving genetic data, monitoring data, personal health data, and synthetic data. Each use case applies different types of data and AI in various health-related decision-making contexts, allowing for a comprehensive investigation of the challenges and requirements for responsible AI development and implementation. A key lesson learned by ELSA AI Lab Northern Netherlands is the rapid pace of AI development and the overwhelming volume of available information. Enhancing understanding of both technological and ELSA issues is crucial for researchers and the public alike.

'ELSA AI Lab Northern Netherlands' research is centred around three key concepts essential for trustworthy AI: availability, use, and performance.'



VISIT OUR WEBSITE

Transformative outcomes and educational initiatives

The Lab's work is organized into interconnected ELSA research areas, each contributing to the development of the ELSA tool. This tool, created iteratively and in co-creation with stakeholders and end-users, helps navigate the challenges and requirements of AI development in healthcare. Additionally, ELSA AI Lab Northern Netherlands is committed to informing healthcare professionals, citizens, and patient groups about responsible AI through initiatives like 'Your Technology of Tomorrow'.

Delivered via the University of Groningen's science truck, this program visits over 100 schools and reaches 25,000 students annually, enhancing AI literacy among young learners.

Sara Soriano Longarón *has been a PhD candidate at ELSA-NN since September 2023. She studied Biochemistry with a Minor in Entrepreneurship and Social Innovation at the Autonomous University of Barcelona.*

1.2 What should the public know?

'I've always wanted to bridge the gap between healthcare and the public by focusing on moral and psychological questions,' she shares. This drive led her to pursue an MSc in Clinical and Psychosocial Epidemiology at the University Medical Center Groningen, where she wrote her master's thesis with ELSA-NN on improving healthcare systems with human-centred innovations.

Information for the public

At ELSA AI Lab Northern Netherlands, Sara's research is part of the psychology work package. 'My research aims to understand what information should be offered to the general public about AI applications and how to reduce barriers for the development, use, and performance of AI in healthcare,' she explains. Guided by the public and patient advisory board of ELSA AI Lab Northern Netherlands and various AI use case partners, her work is truly collaborative.

Understanding public perceptions

Sara focuses on the societal aspects of AI (the S of ELSA): 'I work with different societal groups to understand their perspectives and address their concerns and needs,' she says. With AI applications being so diverse, people's perceptions and acceptance of AI are ever-evolving. Her initial research step involves investigating acceptance and concerns among the general public through a cross-sectional online survey. Participants from the Netherlands are randomly assigned to reflect on one of the ELSA AI Lab Northern Netherlands use cases. Sara measures general attitudes towards AI, personality traits, and AI literacy, followed by an evaluation of AI applications. By combining these insights, she aims to develop a comprehensive understanding of the factors influencing acceptance, aiding in the creation of effective information strategies.

Bridging the gap

'The goal of my research is to identify effective information strategies for informing different societal groups about AI applications,' Sara explains.

These strategies are crucial for responsibly integrating AI into healthcare, ensuring that everyone can benefit from the opportunities AI offers while being aware of possible risks. She hopes her research will help the public make informed decisions and prevent existing health inequalities from increasing with the use of AI in healthcare. Sara's dedication to bridging the gap between AI and the public is paving the way for a more informed and equitable healthcare system.

'The goal of my research is to identify effective information strategies for informing different societal groups about AI applications.'

1.3 Integrating artistic approaches in AI research

Exploring artistic contributions to AI development

Within ELSA AI Lab Northern Netherlands, Judith aims to demonstrate and understand the impact of artistic research on research methodologies and AI healthcare developments. ‘Our project addresses a complex societal challenge: preventing health inequalities from increasing with the introduction of innovative health technologies,’ she explains. The research is set up in colLaboration with ELSA AI Lab Northern Netherlands consortium partners and creative professionals who critically question the automation of care.

‘Before joining ELSA-NN, I worked in various cultural settings within and outside academia, merging critical humanistic approaches with emerging, data-driven spatial methods and technologies.’

Artistic approaches as catalysts for innovation

Judith’s focus is on integrating artistic approaches into ELSA research. ‘Collaboration with the arts isn’t new, but it often focuses on popularization and dissemination. I believe artistic approaches can act as catalysts for innovation at all research stages, transcending and revolutionizing standard scientific practices,’ she notes. Artistic approaches combine theory and practice, offering opportunities to inspire new perspectives and imagine future scenarios for AI’s role. This kind of ‘social dreaming’ about our collective future allows researchers to redefine questions and research directions. Understanding how artistic input changes the ELSA research process is crucial, and this will be investigated through the development of a monitoring method and guidelines.

Impacting perspectives on AI in healthcare

Judith expects her research to impact the understanding and perspectives on AI development in healthcare. ‘By considering AI’s development from a broad range of perspectives and contemplating different future scenarios, researchers, stakeholders, and citizens can act as equal agents in this development,’ she says. Her research aims to produce conventional research papers on methods and methodology, practical guidelines for art-science colLaboration, but also artworks, events, and an exhibition to engage with all stakeholders. This holistic approach enriches the scientific process and broadens the conversation around AI’s potential and challenges.

Judith van der Elst, *who obtained her PhD in Anthropology (Archaeology) at the University of New Mexico, joined the ELSA AI Lab Northern Netherlands (ELSA-NN) in September 2022. Judith currently researches at the Minerva Art Academy of the Hanze University of Applied Sciences, focusing on the role of art in transdisciplinary research.*

‘Our project addresses a complex societal challenge: preventing health inequalities from increasing with the introduction of innovative health technologies’

2 AI, Media & Democracy

In a world in which AI enables us to alter voices and appearances, how can we still ensure the news we see is authentic? How do we know if information generated with AI tools such as ChatGPT is trustworthy? The ELSA Lab AI, Media, & Democracy (AIMD) explores challenges on the crossroads of technology and media, focusing on the societal implications of AI via media on democracy.

AI, media and democracy

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

2.1 The Lab

Navigating the future of media and democracy

From left to right: Han La Poutré, Sara Spaargaren, Pablo César, Nanda Piersma, Pascal Wiggers, Laura Hollink, Natali Helberger, Tamara Witschge, Claes de Vreese

The AI, Media, and Democracy ELSA Lab focuses on understanding how AI influences the democratic functioning of the media. Together with journalists, media professionals, designers, citizens, researchers, and societal partners, the Lab develops and tests human-centred AI-applications and ethical and legal frameworks. The aim is to stimulate the innovation of responsible AI applications that strengthen the democratic function of media.

VISIT OUR WEBSITE

Located at the Institute for Advanced Study in the heart of Amsterdam, the Lab provides a dedicated space for interdisciplinary research. Every Tuesday, team members meet, brainstorm, and co-work in the Lab space. The Lab also organizes community events and connects with the broader community online, discussing topics like the impact of Generative AI on the media and AI's role in elections.

Applying innovative methods for societal impact

AIMD conducted a large-scale survey to gauge citizens' attitudes towards AI in journalism and workshops with media partners to identify AI-related needs and challenges. Currently, the Lab is creating an AI sandbox environment to test assumptions and prototype AI tools with media practitioners, particularly focusing on content recommender systems (e.g. Spotify, Netflix, YouTube). This approach helps bridge the gap between theoretical research and practical applications, ensuring that the tools that are developed are relevant and effective.

Strengthening media and democracy through ethical AI

The Lab aims to enhance the understanding of how AI influences the relationship between media, its users, and democracy. The focus is on building and testing AI tools that respect and contribute to public values instead of compromising them. One of the Lab's goals is to promote independent innovation outside of large tech platforms. The ELSA Lab AI Media & Democracy continues to evolve, addressing emerging challenges and ensuring that AI advancements benefit society, while upholding democratic values. Through interdisciplinary colLaboration and innovative research, the Lab aims to create a media landscape where AI enhances, rather than undermines, democratic processes.

Adaptable research programs

The Lab has learned valuable lessons from its flexible and adaptable research agenda, co-informed by stakeholders. In the first year, the introduction of ChatGPT and other Generative AI technologies made a quick change to the media ecosystem. In response, the Lab emphasized this technology in their research, analysing ethical guidelines drafted by media organizations across the globe. They also launched an online seminar series, 'The Impact We Generate,' to facilitate dialogue among policymakers, academics, and media professionals.

'One of the Lab's goals is to promote independent innovation outside of large tech platforms.'

INTERVIEW WITH HANNES COOLS AND ANNA SCHJØTT HANSEN

Hannes Cools *has a background in political science and journalism. He joined the AI, Media, and Democracy Lab in November 2022. What he loves about being involved in an ELSA Lab is the interdisciplinary nature of the research. There's a strong emphasis on the practical implications of research work, which aligns closely with the kind of researcher he aspires to be.*

Anna Schjøtt Hansen *comes from a background in technological anthropology and journalism. She joined the AI, Media, and Democracy Lab as an affiliated PhD candidate in the summer of 2022. What she enjoys most is the interdisciplinary way of working and the focus on collaborating with partners, aiming to have a direct impact both locally and more broadly in society.*

We talk to them about their research on responsible AI use at the BBC.

2.2 Exploring responsible AI at the BBC

Helping the media use AI responsibly

'Our research at the ELSA Lab aims to contribute to the understanding and practice of responsible AI at the BBC', tells Hannes. 'This effort is part of the broader goal of the AI Media and Democracy Lab to help the media sector use and develop AI responsibly.' The research was composed of two complementary projects: one focusing on transparency practices and the other on decision-making practices around AI at the BBC.

Close collaboration with stakeholders within the BBC, including researchers, legal staff, data scientists, and editors. 'Our reach extended beyond the BBC through two significant events. One was organized by BRAID in September 2023, and hosted an interdisciplinary group of researchers and artists. The other event, organized by the BBC, included research partners, legislative bodies, other research institutes, and industry associations.'

'They collaborated closely with stakeholders within the BBC, including researchers, legal staff, data scientists, and editors.'

Workshops with BBC Staff

The research projects at the BBC utilized participatory observation and interviews as core methodologies. Additionally, Anna and Hannes incorporated an action research component through three workshops with BBC staff. These workshops aimed to qualify initial insights and co-create solutions that can help the BBC and other media organizations pursue responsible AI.

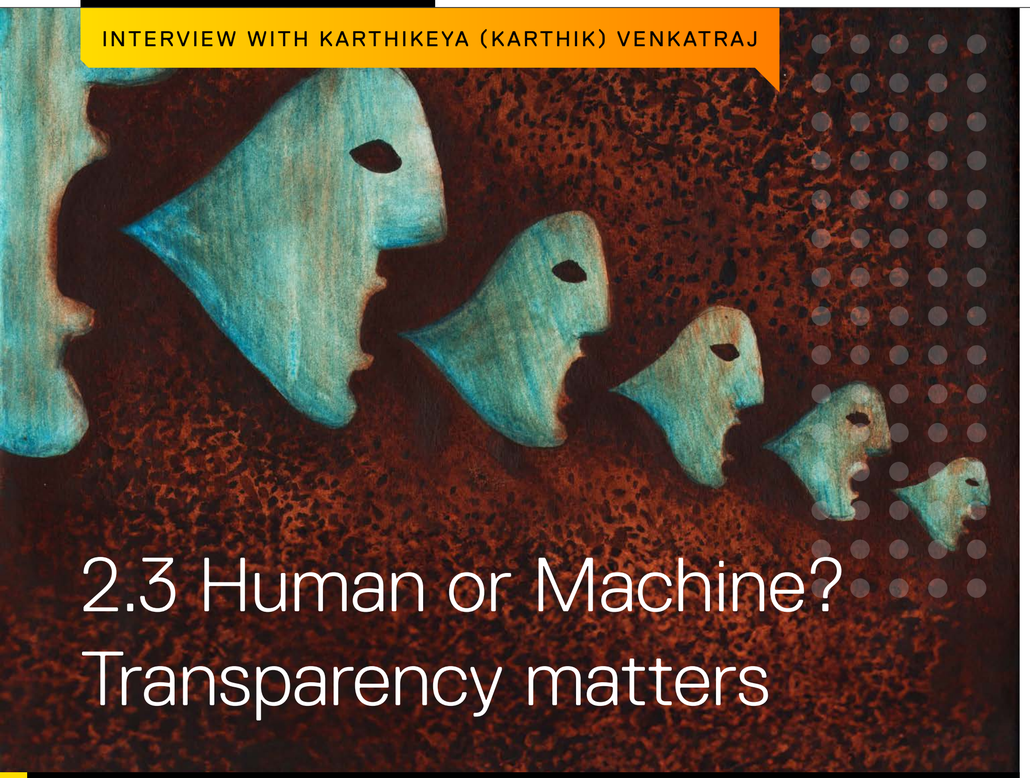
Anna: 'The workshops added immediate value by enabling reflection on existing practices. They were developed into two internal reports that will support future practices at the BBC, presented to the involved stakeholders in April 2024'. This participatory approach ensured that our research remained grounded in real-world challenges and opportunities.

Technologies that enhance democratic processes

Both projects led to several key findings and recommendations for the BBC, which will be disseminated through a journal article (co-authored with the BBC) and a blog post. Hannes: 'Our findings highlight the requirements needed to ensure good conditions for developing and using AI in the media sector and point to potential issues such as unclarity and decision asymmetries.'

The impact of the research is aimed at other media organizations facing similar challenges, as well as contributing to the emerging scholarship on AI in the media. By sharing their insights and recommendations, Anna and Hannes hope to support the responsible integration of AI in the media sector, ensuring that these technologies enhance rather than sabotage democratic processes.

INTERVIEW WITH KARTHIKEYA (KARTHIK) VENKATRAJ



2.3 Human or Machine? Transparency matters

Ensuring Transparency in AI-Generated Content

Karthik leads a research project aimed at enhancing the trustworthiness and authenticity of media content by addressing the challenges posed by the introduction of generative AI systems. In line with the transparency obligations established by Article 50 of the European AI Act, the project seeks to develop effective and transparent AI disclosures specifically for the media sector. To achieve this, the project brings together researchers from diverse fields, including Human-Computer Interaction, Design, Law, and Communication Science, to collaboratively design solutions. Karthik hopes to enhance the understanding of Human-AI Interaction.

Knowing who (or what) you are dealing with

'It is essential that users are made aware that they are interacting with AI systems,' Karthik emphasizes. His focus is on designing disclosures that are transparent, informative, and minimally distracting to explain the pros and cons of AI use. The research uses a mixed methods approach, combining both quantitative and qualitative methods. Focus groups with citizens have been conducted to understand their information needs and concerns regarding AI disclosures, which inform cocreation sessions with media partners to design and test prototypes.

Impacting AI literacy and empowering users

Karthik's research aims to address the challenge of integrating transparency within Human-AI interaction, requiring colLaborative efforts from researchers and practitioners across industries and institutes. The primary focus is 'to contribute towards the creation of AI technology for social good, increase AI literacy, empower users, and ensure human creative practices are safeguarded.' Karthik believes that this work can provide the news and media sector with tools to design AI systems with better and more meaningful disclosure mechanisms. His research is expected to benefit both scientific and societal spheres, contributing towards the creation of AI technology for social good.

'It is essential that users are made aware that they are interacting with AI systems.'

Karthikeya (Karthik) Venkatraj, *whose background lies in design research and Human-Computer Interaction, joined the AI, Media, and Democracy (AIMD) Lab in November 2023. His role involves facilitating colLaboration between researchers from three research groups at the Centrum Wiskunde en Informatica: Distributed & Interactive Systems, Intelligent & Autonomous Systems and Human-Centred Data Analytics. He focuses on designing disclosures for AI tools that are transparent, informative and minimally distracting.*

His reason to join the ELSA Lab? 'I like the Lab's approach in tackling very complex topics with an interdisciplinary team. This provides a comprehensive and holistic understanding and helps me to also look at my work from different perspectives. I also enjoy taking part in the workshops, discussions and events hosted by the Lab'.

3 Defence

ELSA LAB DEFENCE

Which military AI-based systems are acceptable from an ethical, legal, and societal point of view, and which are not? And under what circumstances? The ELSA Defence Lab ensures a responsible implementation of AI in military systems, military doctrine, and military training.

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The ELSA Defence Lab Team

3.1 The Lab

Fighting for a safe use of new technologies

The rapid development of AI has enabled a wide range of military applications, raising significant ethical and legal concerns. How can humans, not AI systems, maintain control over military actions? How can existing legal frameworks, like International Humanitarian Law, be upheld? The Defence Lab aims to address these critical questions by investigating the ethical, legal, and societal aspects of military AI. A multidisciplinary team collaborates at military bases (like the Defence Helicopter Command in Gilze-Rijen), TNO sites (such as the Human-Agent Teaming Lab in Soesterberg), and universities (like TU Delft and the Law Faculty at Leiden University) to investigate AI in the military. Quarterly General Assembly meetings and digital colLaborations ensure alignment and progress.

VISIT OUR WEBSITE

‘How can humans, not AI systems, maintain control over military actions?’

Threefold action on military AI

Firstly, the ELSA Lab Defence develops methodologies for context-dependent analysis, design, and evaluation of military AI applications. By building on existing methods such as value-sensitive design, explainable algorithms, and human-machine teaming, these methodologies are adapted through case studies, including the use of semi-autonomous robots and AI in countering disinformation. Secondly, researchers study how society and the military personnel perceive the use of AI. Finally, the Lab monitors the global technological, military and societal developments that could influence the attitude towards military AI-based applications.

From the lab to real life

The Lab emphasizes adapting military doctrine and training to incorporate ethical and legal considerations. Training military personnel on AI capabilities, limitations, and ethical implications fosters a culture of responsibility and accountability. Through rigorous research, interdisciplinary colLaboration, and continuous dialogue, the ELSA Lab Defence aims to ethically integrate AI in defence, enhancing military capabilities while aligning with societal values and legal standards.

Researchers identify which AI systems are ethically, legally, and societally acceptable and under what circumstances they are justified so as to amplify rather than undermine human decision-making. The Lab combines methods from different disciplines to identify best practices and determine their application at different AI lifecycle stages and operational environments. These efforts ensure that AI enhances military capabilities responsibly, contributing to global discussions on the ethical use of emerging technologies.

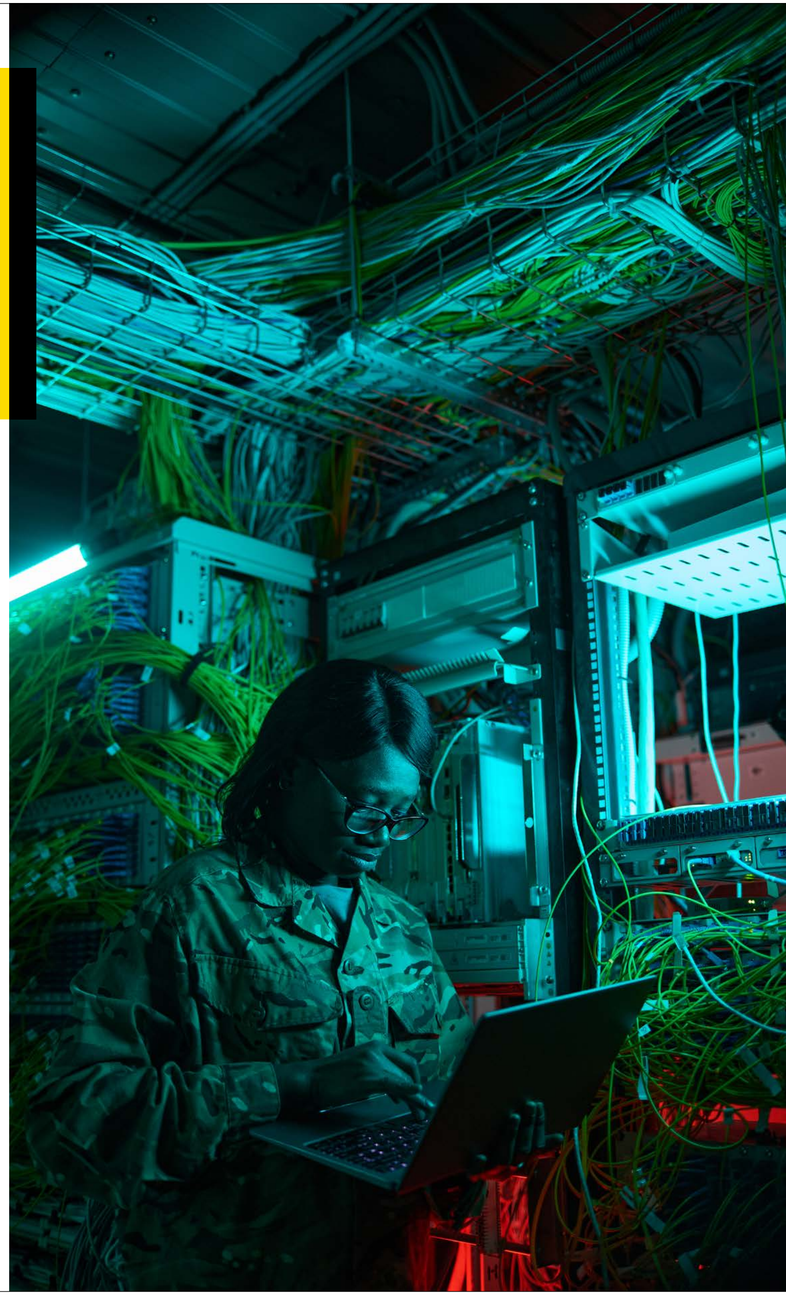
‘Researchers identify which AI systems are ethically, legally, and societally acceptable and under what circumstances they are justified so as to amplify rather than undermine human decision-making’

Concrete examples of work include:

- Publications: ‘Design Methodologies for Addressing Ethical, Legal and Societal Aspects (ELSA) of Military AI Applications (Version 1.1)’ and ‘The Introduction Model of a Military Autonomous Device Following International Humanitarian Law’. View all publications here.
- Workshops: International participatory workshops with stakeholders from civil society, military, research, and engineering, such as those held with NATO (Nov 8-10, 2023, London) and at the REAIM conference (Feb 15-16, 2023, The Hague).

Flexibility is key!

Flexibility is essential, as not every method suits every stage of military operations. Various methods from different disciplines (law, ethics, engineering) are useful to identify and address ELSA of military AI applications. Understanding contextual factors is crucial for determining the most suitable approach. Emphasis is also placed on examining how results from one method can inform other methods. For example: How can legislation or policy frameworks be translated to design requirements and how do these design requirements relate to operational doctrines and military training?



3.2 Guidelines for human-AI interaction in the military

Researchers at the ELSA Lab Defence are constantly evaluating how AI can have a positive impact in the military. In a world where technology is increasingly used as a weapon, they believe it is crucial to uphold humanitarian ethics in AI warfare. To them, doing good means ensuring that technological advancements are responsibly implemented by Defence organizations. We speak with Ivana Akrum and Marlijn Heijnen, who investigate human-machine team design patterns and develop guidelines for human-machine interaction in military teams.

What is the aim of your current research?

'We are now focusing on an ELSA methodology known as human-machine team design patterns. These are guidelines for how people and AI systems can best work together. We are looking into whether team design patterns can be used to identify and to find reusable solutions to address ELSA challenges within the military domain. If team design patterns prove to be useful in various contexts in the military, they could be included into AI design processes.'

How do team design patterns help address ELSA challenges in human-AI interactions?

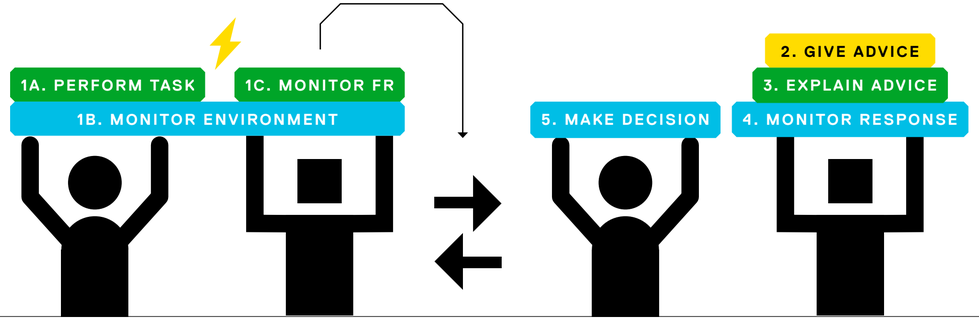
'Team design patterns can strengthen the alignment of military AI-based systems by addressing specific design aspects such as explainability, trust calibration, system state awareness, decision control, and co-learning in human-machine teams. The patterns describe roles, tasks, and responsibilities within teams of human and machine actors and present abstract, reusable solutions to recurring problems. Within the military domain, an ELSA Design Pattern can for instance recommend how to design a decision-support system that safeguards meaningful human control.'

What outcomes do you anticipate from your research?

'We aim to deliver validated design patterns that can be used across various contexts. These patterns will help identify fundamental AI/human issues in the military domain and aid in finding recurring solutions for these challenges. By making these design patterns available, we hope to support the development of responsible military AI and ensure that meaningful human control is safeguarded in AI applications.'

Ivana Akrum *has a background in Artificial Intelligence and Cognitive Science. She realized the importance of considering people when designing and developing AI technologies early in her studies and wants to create AI that has a positive impact on society. She joined the Defence Lab in the early years (2022) and researches ELSA methodologies as well as manages the website.*

Marlijn Heijnen *is a political and data scientist, working at the department of Human Machine Teaming at TNO. Within the Defence Lab, she works as a researcher and a project lead. To her, making a difference means building a world where technological advancements are responsibly implemented by defence organisations: 'The world in which we live, wherein AI is already used in weapons and as a weapon, has sparked a motivation to ensure that we remain watchful over our (Western) humanitarian ethics in AI warfare. This is what I feel as doing good; building a world where our technological advancements are responsibly implemented by defence organizations'.*



4

AI 4 Sustainable Food Systems

How can AI sustainably transform our food systems? The AI for Sustainable Food Systems Lab addresses ethical, legal, and societal aspects (ELSA) at the micro level of AI based food systems, the meso level of socio-political food issues and power dynamics, and the macro level of world views and value frames.

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AI for Sustainable Food Systems
Ethical, Legal, Societal Aspects

4.1 The Lab

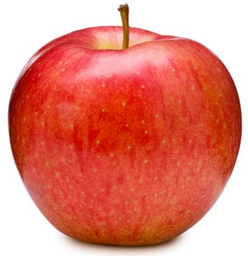
Lessons from the field

The AI for Sustainable Food Systems Laboratory (AI4SFS), based at Wageningen University & Research, focuses on the ethical, legal, and social challenges and opportunities related to AI applications in sustainable food systems. The Lab aims to design methodologies, tools, guidelines, and engagement strategies to ensure responsible and trustworthy AI in the food sector.

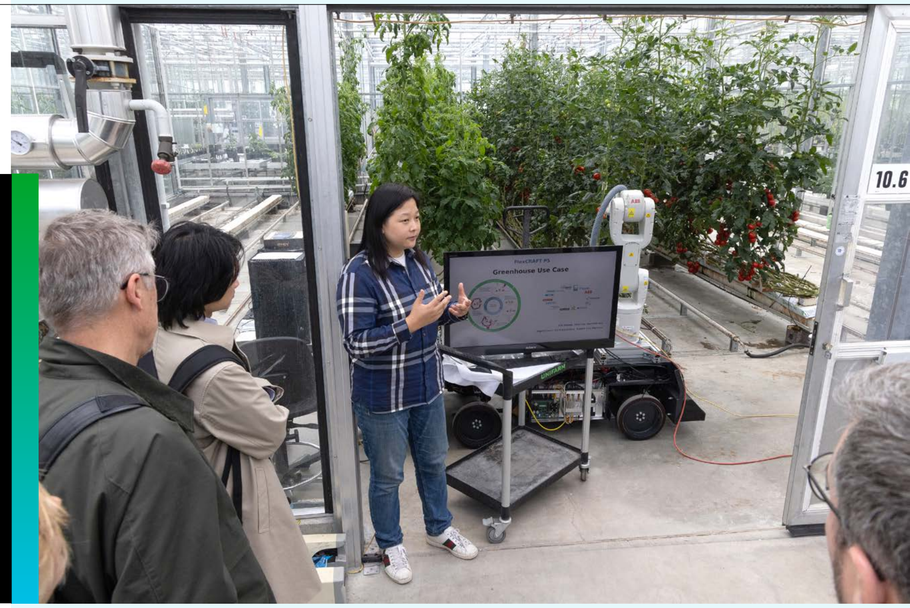
The laboratory is a so called ‘pop-up lab,’ setting up in various locations such as technical laboratories or farms. In the lab, quadruple helix stakeholders - academia, industry, government, and civil society - are engaged. They work collaboratively to identify ELSA issues related to specific AI research and development projects in agriculture and food. They explore strategies to address these issues, and experiment with alternative design options.

Cultivating interdisciplinarity and European colLaboration

One of the specialities of AI4SFS is the strong involvement of humanities scholars as well as engineers. The Lab is involved in multiple European projects, making it possible to compare food related ELSA issues in the Netherlands with other countries. In its research approach, the Lab bears heavily on studies in Ethics of Technology and Responsible Research & Innovation. The methodological approach incorporates insights from previous research in stakeholder engagement, technology impact tools, and social lab methodologies. A particular interest is in the ethical and philosophical aspects of AI.



‘The laboratory is a so called ‘pop-up lab,’ setting up in various locations such as technical laboratories or farms.’



Case based research from farm to fork

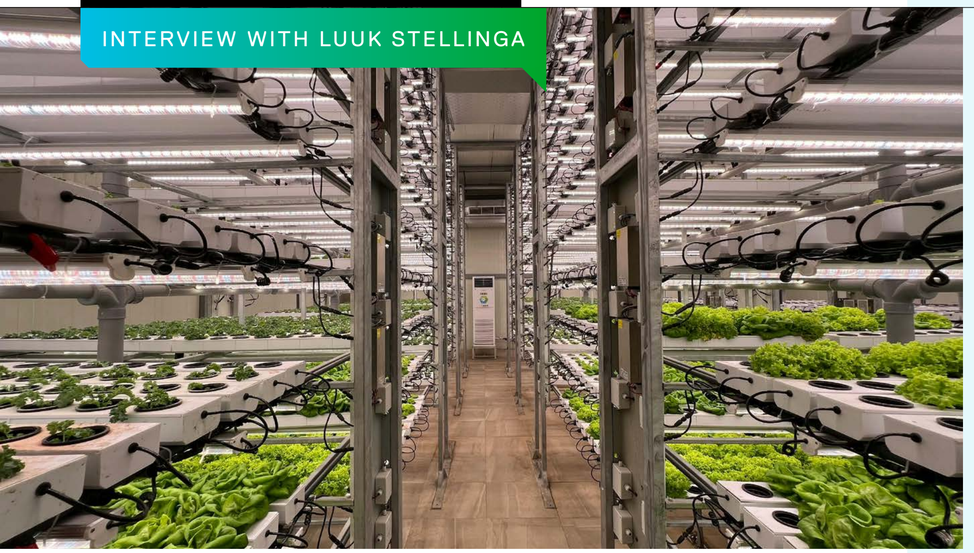
The AI for Sustainable Food Systems Lab is a case-based research project involving various research teams and R&D companies. The Lab studies AI-based systems from farm to fork. An example of the Lab’s work is a study on an AI-driven decision support system for medical diagnosis in milking robots. The Lab aims to ensure that the technology supports farmers ethically and legally. The technology should also enhance animal welfare and operate efficiently without compromising on ethical standards. By engaging diverse stakeholders and applying robust ethical frameworks, the lab ensures that such technologies are developed and implemented responsibly.

VISIT OUR WEBSITE

Yielded outcomes

Concrete outcomes include the development of best practice cases for AI in the agri-food sector and practical insights into addressing ELSA aspects in AI design. The AI for Sustainable Food Systems Laboratory expects to provide insights in a) ELSA aspects at stake in the agri-food sector, b) mechanisms to address ELSA in design practices c) best practice cases of trust-worthy and responsible AI.

INTERVIEW WITH LUUK STELLINGA



4.2 What we think we know about humans and technology

Unpacking Human-Centred AI

In his project, Stellinga investigates the philosophical assumptions behind the phrase ‘human-centred AI.’ This phrase is one of the building blocks of ELSA lab research, features prominently in the European Commission’s AI strategy, and is almost ubiquitous in academic discourse, yet it hasn’t been critically examined. He explores philosophical questions such as what is meant by ‘human,’ and the role envisioned for nonhuman animals and the natural environment. ‘The next goal is to understand how these answers are embedded in the development, design, and use of AI technologies,’ he explains.

Uncovering implicit assumptions

Stellinga’s interest is in the implicit conceptualizations people have when considering AI and its impact. He asks, ‘What is taken for granted in our thinking about humans, technologies, and the natural environment?’ To study these implicit conceptualizations, he uses a critical hermeneutical approach, focusing on interpreting and deconstructing assumptions at a conceptual level. In the next phase of his research, he aims to incorporate more qualitative research methods to ensure a solid conceptual and empirical foundation for his claims.

Shaping the future of AI ethics and policy

Through his research, Stellinga hopes to contribute to a better conceptual understanding of the relationship between humans, technologies, and the natural environment, highlighting the ethical and political stakes of AI. On a societal level, he aspires to foster a growing critical awareness of how AI discourses are framed. ‘By understanding that narratives about the future of AI benefit some actors more than others,’ he notes, ‘we can better focus our attention on helping those in need and addressing the blind spots in AI ethics, policy, and governance.’

Luuk Stellinga *began his academic journey studying philosophy at the University of Groningen, then pursued a master’s in philosophy of technology at the University of Twente. His fascination with philosophical questions surrounding digital technologies led him to the ELSA lab at Wageningen University, where he has been a PhD candidate since September 2022. ‘The ELSA lab is a fascinating place to be for someone like me,’ he says, ‘allowing me to explore philosophical questions while being directly involved with the development and assessment of technical systems.’*

‘What is taken for granted in our thinking about humans, technologies, and the natural environment?’

INTERVIEW WITH DR. ROELAND CHRISTIAAN VERAART

Dr. Roeland Christiaan Veraart *is trained in fundamental philosophy with a clear focus on sustainability and technology. He is currently a postdoc researcher at Wageningen University, working on the European agricultural data economy within the EU project Data4Food. His academic background and current role allow him to deeply explore the intersection of these crucial fields. In this interview, he explains why ELSA practices are essential to his research.*

4.3 ELSA for addressing the big problems of our time

Why is an ELSA analysis essential for your research?

'The data economy for food systems isn't just a technical web of computers, sensors, and machines. It has a vast range of potential consequences for future human life. Food systems are central to the global economy, essential for feeding the population, and they play a major role in sustainability. The upcoming digitalization brings numerous opportunities and challenges for social, ethical and legal life that require thorough consideration. Therefore, its crucial to view this development with an ELSA lens wherein social sciences work alongside natural and data sciences. That's how we are able to keep track of the moral implications of our work in Data4Food.'

What is the ELSA approach in your research?

'The ELSA approach systematically studies the ethical, legal, and societal aspects of key technologies like the data economy. It allows for standardized anticipation of moral issues, interactivity with stakeholders and the public for co-design opportunities, and interdisciplinarity to bridge boundaries between research communities. It's closely related to the Responsible Research and Innovation (RRI) approach, focusing on societal impact, inclusion of diverse perspectives, and responsiveness and responsibility when action is needed.'

'The complex issues of our times, such as climate change, hunger, and AI ethics, require the efforts of all involved disciplines to talk and listen to each other.'

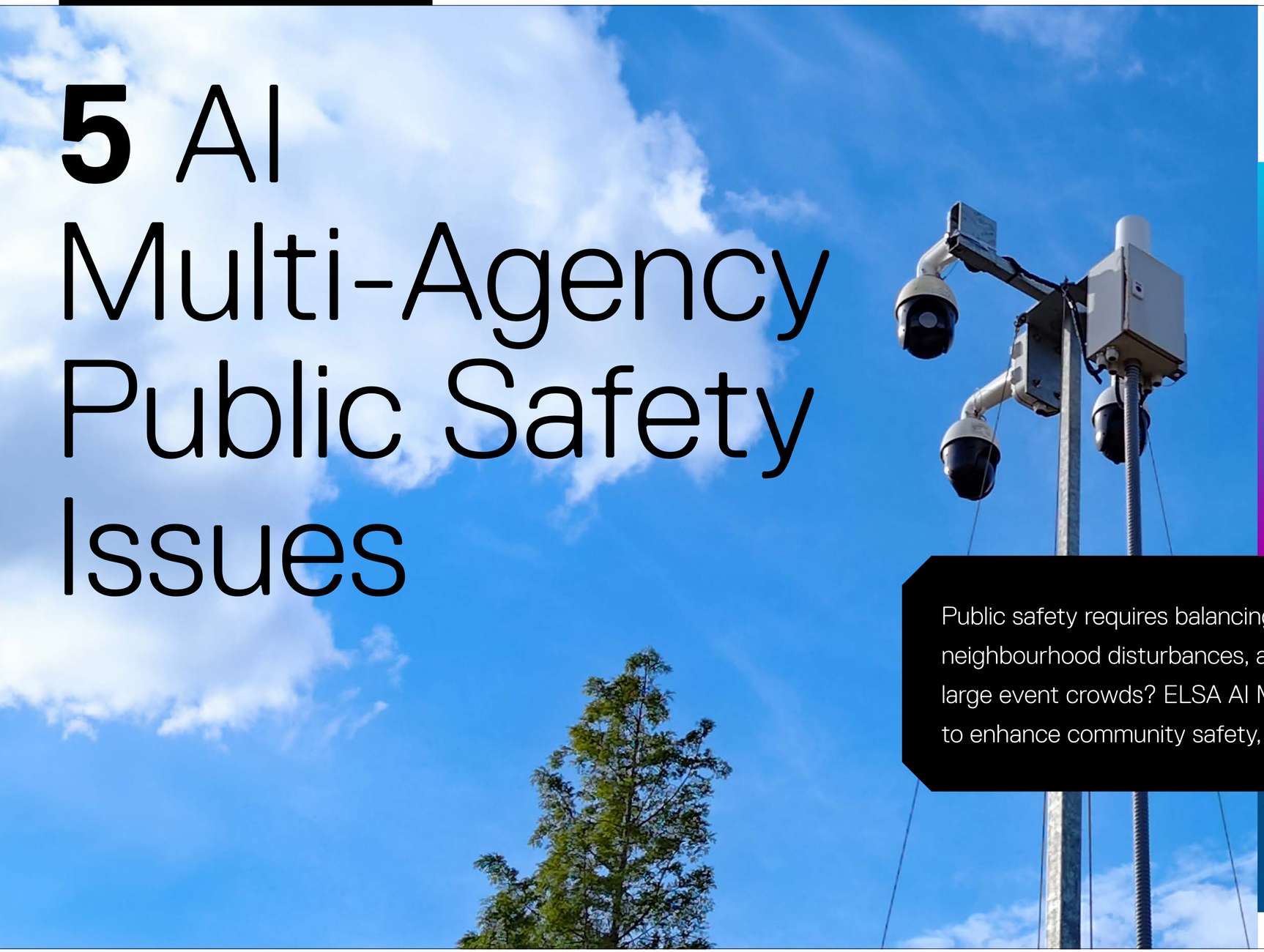
What are the expected outcomes and impacts of your research?

'The complex issues of our times, such as climate change, hunger, and AI ethics, require the efforts of all involved disciplines to talk and listen to each other. Interdisciplinary colLaboration is crucial for working towards a sustainable and equitable future. In early October, the Data4Food team took a first step by gathering to discuss onward strategies, where we introduced and explained the ELSA approach during plenary presentations. We aim to become a well-known hub of interconnected science, constantly in dialogue with government, global research, and tech companies, to ensure responsible applications of future technologies.'

What do you hope to achieve with your research?

'I hope that my research can contribute to a better conceptual understanding of the relationship between humans, technologies, and the natural environment. By fostering a growing critical awareness of how AI discourses are framed, we can better help those in need and address the blind spots in AI ethics, policy, and governance.'

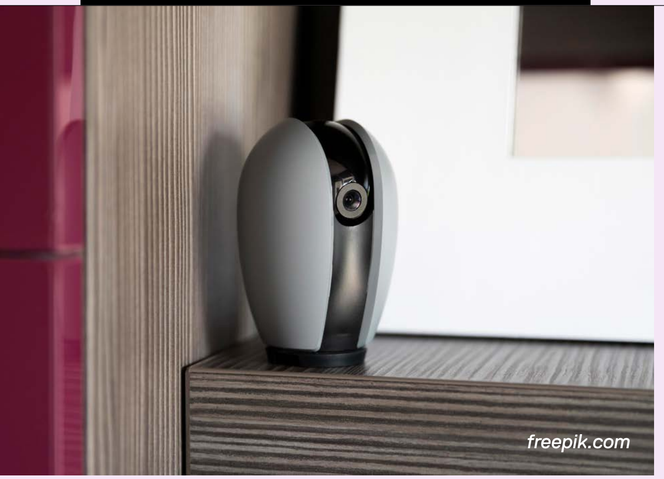
5 AI Multi-Agency Public Safety Issues



ai maps

Public safety requires balancing freedom and security. How can AI predict neighbourhood disturbances, assist in solving high-impact crimes, and manage large event crowds? ELSA AI MAPS explores these questions, leading solutions to enhance community safety, while maintaining individual liberties.

16 PEACE, JUSTICE AND STRONG INSTITUTIONS



5.1 The Lab

Striking a balance between technological safety and freedom

AI MAPS operates as a multi-stakeholder, multidisciplinary Lab, incorporating the perspectives of the quintuple helix. Weekly meetings from Erasmus University Rotterdam facilitate discussions on research, mini-workshops with project stakeholders and researchers, and enhance the understanding of technology and freedom. By systematically learning about different aspects of AI device use and building strong relationships with all involved parties, AI MAPS aims to create a safer society.

Public Safety matters

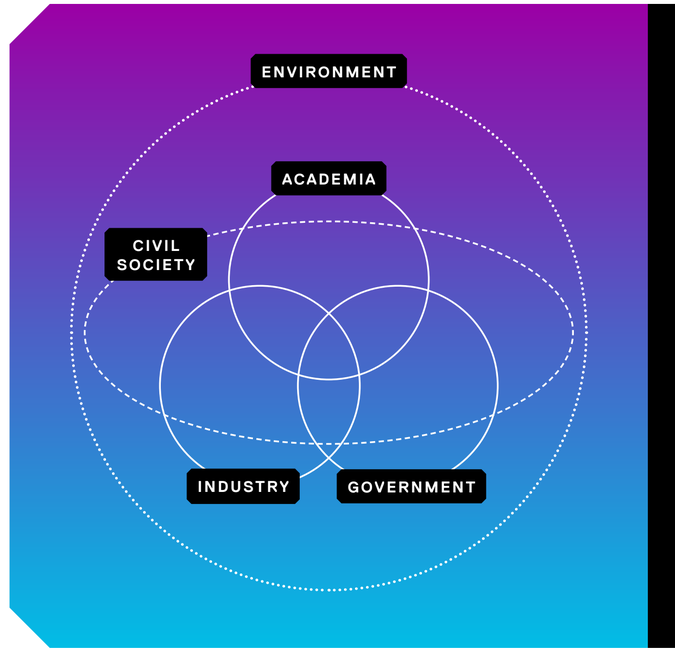
Public safety matters to everyone. So at the core of AI MAPS is the question: how do we get all perspectives and voices heard? This complex issue is tackled by narrowing the focus. The research process starts with something very specific, like a smart lamp post, an AI algorithm, or another tech device. Then, a deep dive is done by asking questions about the product, the person using it, who makes it, who decided to implement it, and what problem it's meant to solve, among other things. A systematic stakeholder analysis is finally used, considering the ELSA dimensions during this process. This helps in understanding how AI fits into the world and how the world fits into AI.

Practical Outcomes and 'AI-cologies'

The ELSA approach allows to learn from specific, hand-on problems in public safety. This helps to analyse current practices around AI devices. By staying close to the concrete use of AI, 'critical friendships' with stakeholders are established with for instance producers or customers. The ELSA approach allows to reflect in collaborative environments, referred to as 'AI-cologies,' that enable reflection and mutual learning. These collaborative efforts are paving the way for AI solutions that respect human values and societal norms, ensuring a balanced approach to public safety.

Out of your comfort zone!

Establishing an ELSA Lab requires time, curiosity, and a willingness to step out of one's comfort zone. One key lesson is the importance of moving slowly and listening carefully to build critical friendships, especially with urban community residents. Another significant insight is that the ELSA approach can foster unusual alliances and contribute to mutual understanding among diverse stakeholders.



Quintuple helix collaboration

'The ELSA approach can foster unusual alliances and contribute to mutual understanding among diverse stakeholders.'

INTERVIEWS WITH MARC STEEN, MAJSA STORBECK AND MARLON VALENTIJN KRUIZINGA

5.2 From ELSA to ELSTA

Three researchers from the AI MAPS project: Marc Steen, Majsa Storbeck, and Marlon Valentijn Kruizinga, discuss their work on the ethical, legal, societal and technological aspects of AI in public safety. Their research aims to create a safer, more transparent, and equitable future for public safety, ensuring that AI is developed and deployed responsibly and in collaboration with important stakeholders. They take the ELSA approach a step further by including technological aspects and practice so-called ELSTA style research.

ELS(T)A Research Explained

What is the aim and set-up of your research in AI MAPS?

In AI MAPS, my role is to facilitate collaboration between experts in ethical, legal, and societal aspects and those in technology, as well as users like police officers and citizens. We are developing a method called ELSTA (see below), which integrates technological aspects with ethical, legal, and societal considerations, promoting transdisciplinary collaboration.

Can you describe the ELSTA approach?

We are currently writing an article about our approach, which is a variation of ELSA called ELSTA (T for Technological). Instead of asking questions such as: Is this legally allowed? Is this ethically desirable? Is this socially acceptable?, we focus on specific practices and issues, using them as ‘boundary objects’ to facilitate discussions among people with different backgrounds. This participatory and iterative process fosters mutual learning and co-creation, moving beyond traditional one-off evaluations of technology that foster little to no interaction between different disciplines. Our approach includes technological aspects within ELS(T)A, instead of opposing them, fostering more opportunities to steer the development of AI.

What outcomes and impact do you anticipate from your research?

We aim to contribute to responsible innovation the development of ELSA Methods. Our approach aims to advance responsible innovation and ELSA methods by promoting ELSTA, where experts from ethical, legal, societal and technological backgrounds, users and ‘affected people’ work together to address complex challenges around AI.

Marc Steen *is Senior Research Scientist at TNO. He has a background in technology (MSc in Industrial Design Engineering, TU Delft), applied ethics (PhD at University of Humanistic Studies), and constitutional law (OU). He is an expert in responsible innovation, human-centred design, and transdisciplinary collaboration.*

INTERVIEWS WITH MARC STEEN, MAJSA STORBECK AND MARLON VALENTIJN KRUIZINGA

From participants to co-researchers

Majsa Storbeck *is a researcher at AI MAPS. Her background is a sparkling mix between international relations, human rights, and criminology, which allows her to approach issues from multiple viewpoints. She joined AI MAPS in February 2023 and focuses on the intersection of AI, public safety, and democratic stability.*

LinkedIn Profile
Majsa Storbeck

What is the aim and set-up of your research in AI MAPS?

'My research seeks to unravel the complex ways in which AI-driven (often numerical) information manifests in nuanced - or sometimes not so nuanced - human experiences. I'm particularly interested in whether AI in Public Safety strengthens or undermines democratic stability and public trust in existing institutions.'

Can you describe your focus and methods?

'For our first use case, our methods were quite traditional - interviews, observations, and focus groups. We quickly immersed ourselves in the field. The goal was to integrate both literature and field experiences seamlessly, avoiding a binary separation. We conducted ethnographic observations at Extinction Rebellion blockades in the Hague. Here we were able to shadow and work alongside the police in the field (liaison officers) and at their headquarters (OSINT police, among others). This phase laid the groundwork for subsequent semi-structured interviews. We focused on activists and police officers, creating a feedback loop between the groups. This comprehensive approach resulted in approximately 45 interviews and extensive data collection until the end of 2023.'

'Together with the neighbourhood, we will formulate research questions around 'Public Safety': What issues do they face? What deserves attention?'

'We're now transitioning to participatory methods, inspired by Participatory Action Research (PAR). This shift is substantial and requires a cultural and rhetoric change from viewing (and talking) about individuals as 'participants' to 'co-researchers', and from 'data collection' to 'data creation'. It's about mutual learning and promoting social justice. Together with the neighbourhood, we will formulate research questions around 'Public Safety': What issues do they face?'

What outcomes and impact do you anticipate from your research?

'My research fills a significant gap by exploring how AI surveillance impacts various parts of society. It offers decision-makers insights for involving residents and security professionals in designing smart surveillance systems that reflect democratic values. This approach aims to build public trust through transparency and inclusivity. The findings will provide clear recommendations for achieving accountability and fairness in smart surveillance, balancing security with personal freedoms. This study connects AI's legal and ethical aspects with its real-world impacts on people.'

INTERVIEWS WITH MARC STEEN, MAJSA STORBECK AND MARLON VALENTIJN KRUIZINGA

What do you think about AI in public safety?

What is the aim and set-up of your research?

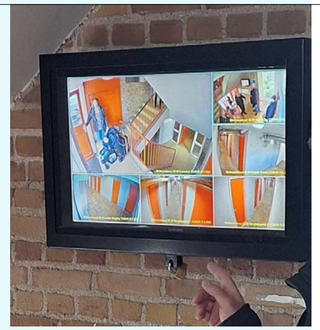
‘My research delves into the ethical perspectives of various stakeholder groups within the quintuple helix model. The study aims to explore ethical values, concepts, and principles in the domain of public safety, and to study their particular interaction with AI. A step further, I intend to show how these differing perspectives can be brought into a productive dialogue.’

‘Through AI-MAPS, researchers and stakeholders engage in joint case studies to tackle AI-related public safety themes, creating opportunities for rich data collection and insightful analysis. This collaborative approach not only bridges different disciplines but also brings together diverse voices to address ethical challenges in real-world contexts. By participating in these joint case studies, my research seeks to illuminate and discuss the ethical dimensions of AI in society, paving the way for a future where technology and ethical considerations go hand in hand and stakeholders are involved in research.’

Can you describe your focus and methods?

‘This research investigates the ethical aspects of AI in public safety through proximity to practice (participatory observation), personal reflection on values (interviews), and collaborative ethical research with various stakeholders (co-creative workshops). Each method represents a step in the process: exploring the normative space and making initial connections, questioning ethical perspectives within societal categories, and moving beyond these categories into inter-stakeholder dialogue. The approach is participatory and transdisciplinary, aiming to foster comprehensive understanding and colLaboration.’

‘The approach is participatory and transdisciplinary, aiming to foster comprehensive understanding and colLaboration.’



© Marlon Kruizinga

What outcomes and impact do you anticipate from your research?

‘My analysis aims to produce new and useful insights into the ethical values and dilemmas related to AI in the public safety context. It also seeks to contribute to developing sustainable processes for ethical deliberation, capable of responding to current and future technological developments.’

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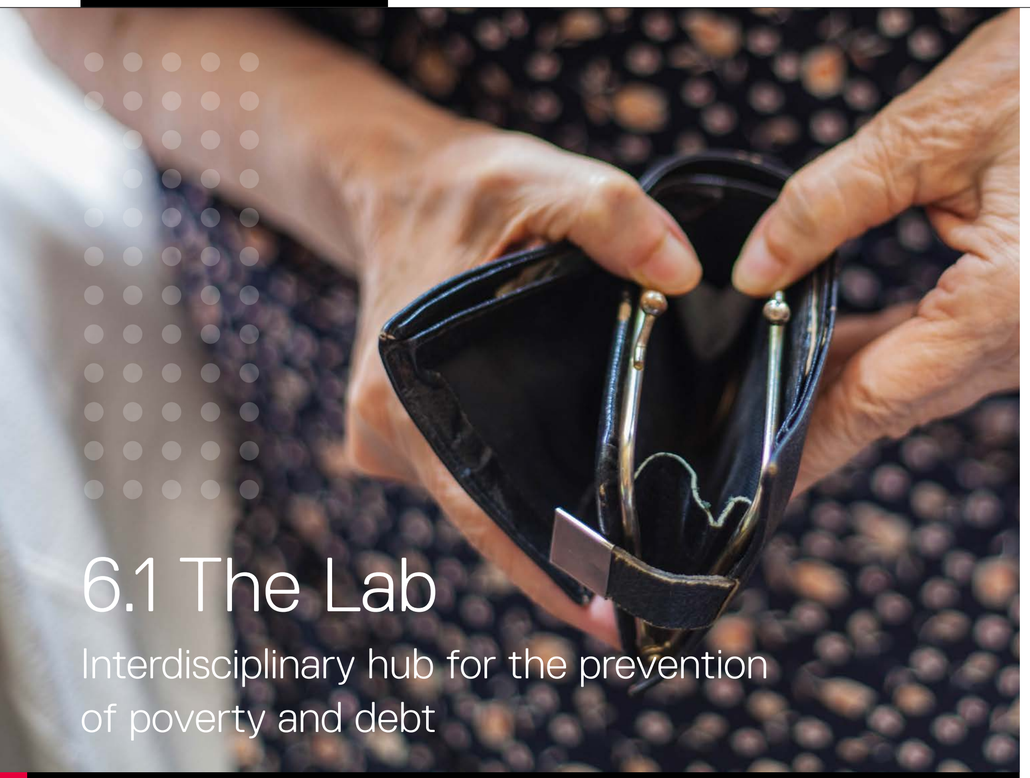
Marlon Valentijn Kruizinga, *PhD Researcher at AI MAPS, has been part of the Lab since February 2023. He has a background in practical philosophy and ethics of technology, absurdism, critical theory, political philosophy and meta-ethics. Through his research he hopes to establish a baseline understanding of how and when we could use AI for public safety in an ethically justifiable way.*

6 Poverty and Debt

How can we make sure that whenever technology, data science and/or AI is used to alleviate poverty and debt, it is done in an ELSA way? The ELSA Lab at the Brightlands Smart Services Campus explores this by integrating ethical, societal, and legal considerations into data science and AI. With innovative methods like Social Labs and Privacy Enhancing Technologies, the Lab develops solutions tailored to real-world challenges, that are sensitive to lived experience.



6.1 The Lab

Interdisciplinary hub for the prevention of poverty and debt

The ELSA Lab Poverty and Debt aims to leverage ELSA-by-design data science and AI to help battle poverty and problematic debts in the Netherlands. Ethical, societal, and legal aspects are prioritized from the initial idea to development and prototype deployment. The Lab, located at the Brightlands Smart Services Campus in Heerlen, serves as an interdisciplinary hub for researchers, data scientists, legal experts, and social scientists. Together they develop ethical, legally compliant, and socially responsible data science and AI applications.

A variety of methods used

The ELSA Lab Poverty & Debt employs a variety of methods within its work packages, tailored to specific contexts. Some concrete examples of these methods are:

- **Social Labs:** identify issues faced by people in poverty, recognize barriers, propose solutions, and develop practical pilot projects.
- **Cultural Probes:** collect data on citizens' habits, routines, and values to tailor interventions sensitive to their lived experiences.
- **Privacy Enhancing Technologies (PET):** leverage secure Multi-Party Computation (MPC), Federated Learning (FL), and Self-Sovereign Identity (SSI) to ensure privacy and security in data management.
- **Data Sharing Initiatives:** facilitate early warning systems through privacy-enhanced technologies.
- **Reflective Sessions:** apply and refine the ELSA methodology through collaborative workshops.

'Addressing questions too early can hinder innovation, so timing is crucial.'

VISIT OUR WEBSITE

Responsible implementation of AI and data science

The Lab has established a collaborative network at the Brightlands Smart Services Campus, involving core partners from various institutions and a broad community of stakeholders. By combining diverse expertise and focusing on ethical, legal, and societal aspects, the ELSA Lab is spearheading a holistic approach to using technology for societal good. Its work is not only advancing the field of data science and AI, but also ensuring these advancements are implemented in a manner that is responsible and beneficial to society as a whole.

No one-size-fits-all process

A key lesson learned is that the ELSA process isn't one-size-fits-all. Customized assessments are needed to spot ethical, legal, and societal issues early, and this must be ongoing to ensure continuous feedback. Addressing questions too early can hinder innovation, so timing is crucial. A governance structure is currently being developed to secure the ELSA method properly.

6.2 Engaging citizens with AI

Grounding data in real-world contexts

‘I believe it’s crucial to create technological solutions that are inclusive and meet the specific needs of vulnerable groups’, Kohl says. Her research aims to provide comprehensive methodological guidance for using cultural probes to explore poverty and debt dynamics. She addresses the multifaceted nature of poverty by encouraging participants to express themselves creatively. Kohl hopes that this method helps bypass the stigma often associated with traditional qualitative methods: ‘We involve other researchers, citizens, and community organizations in co-designing the probes and interpreting the data, ensuring our research remains grounded in real-world contexts.’

Dr. Steffi Kohl *is a senior researcher at the Research Center for Human Data Interaction, Zuyd University of Applied Sciences. Since 2022, she has been involved with the ELSA Lab for Poverty and Debt, focusing on Citizen Engagement. Dr. Kohl’s work intersects human data interaction, cognitive science, and advanced technological tools. She is especially interested in how people perceive and interact with technology and the involvement of vulnerable groups in the development process.*

A nuanced understanding of poverty and debt

Kohl’s research focuses on the societal aspects of poverty and debt among financially vulnerable groups. ‘Cultural probes are a particularly valuable method in this’, she explains, ‘as they engage participants from diverse backgrounds and capture the complexity of their lived experiences’. This approach offers a nuanced understanding of poverty and debt, contributing to the development of more targeted and effective interventions and support mechanisms.

Advancing methodologies and influencing policy

The project will provide detailed methodological guidance on using cultural probes in sensitive settings, contributing to the broader field of Human-Computer Interaction (HCI) and the study of poverty dynamics. Societally, the research aims to develop targeted interventions and support mechanisms that better address the challenges faced by financially vulnerable groups. Kohl: ‘Ultimately, we hope to influence policy and practice, leading to more effective and inclusive strategies for addressing poverty and debt, and contributing to the dialogue on responsible AI and user-centred design’.

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6.3 Ensuring that AI to alleviate poverty and debt is ELSA

Cassy Juhasz *is a PhD candidate at the ELSA Lab for Poverty & Debt, located at the Brightlands Smart Services Campus in Heerlen. She joined the Lab in October 2023 and brings a strong background in Science and Technology Studies. As a native of Heerlen, she was drawn to the Lab because of its focus on poverty, a significant issue in her city. Working in an interdisciplinary team on a topic so close to home felt like the perfect opportunity to make a meaningful impact.*

What is the main aim of your research within the ELSA Lab?

‘My research focuses on the ethical component of the ELSA framework. I aim to develop and refine this framework to ensure that our innovations are ethical, legal, and socially responsible. This involves close colLaboration with other projects and partners, ensuring that our work accurately reflects the lived experiences of those dealing with poverty and debt.’

Can you explain the methods you use in your research?

‘Our method is both experimental and iterative. We integrate ethical reflections into practical research using the ELSA framework. This means continuous experimentation, reflection and refinement. We implement ELSA tools in our projects, hold sessions to discuss ethical aspects, and then refine the tools and projects accordingly.’

‘We also use the social lab methodology. This involves partnering with academia, industry, government, and civil society to identify challenges related to poverty and debt. Together, we brainstorm about solutions, prototype them in real-life settings, and evaluate the outcomes. It is an iterative approach that turns abstract ethical principles into concrete actions.’

What are the expected outcomes and impacts of your research?

‘The outcomes of our research are both theoretical and societal. Theoretically, developing the ELSA framework advances technology ethics by providing concrete guidance beyond abstract AI ethics principles. Societally, the focus on action research ensures that our work can have impact in real-life situations. By creating ethical, actionable solutions, we aim to make a tangible difference in people’s lives, particularly in Heerlen and the wider Netherlands.’

‘By creating ethical, actionable solutions, we aim to make a tangible difference in people’s lives, particularly in Heerlen and the wider Netherlands.

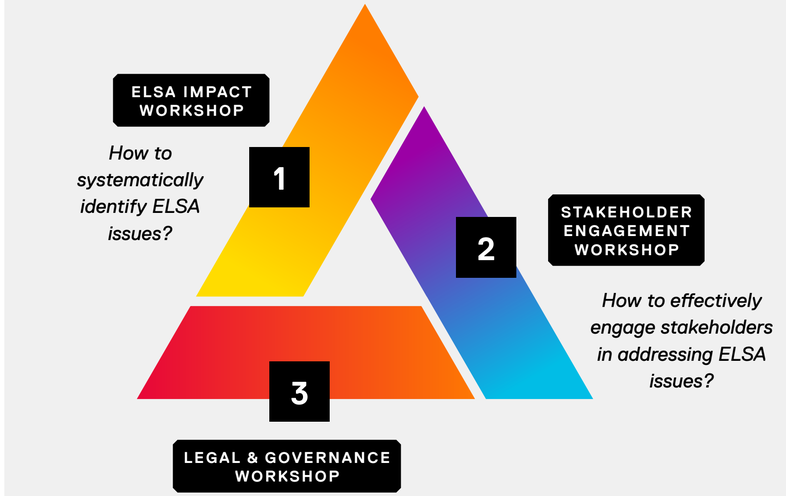
Conclusion

No one-size-fits-all approach

Our recent conference and this magazine have led us to an important conclusion: there is no one-size-fits-all approach in ELSA research! Given the diverse use cases of AI, such a uniform approach may also not be desirable. However, identifying common principles is crucial for making a lasting impact. In this conclusion, we aim to make a start.

ELSA Labs Methodology Conference - outcomes

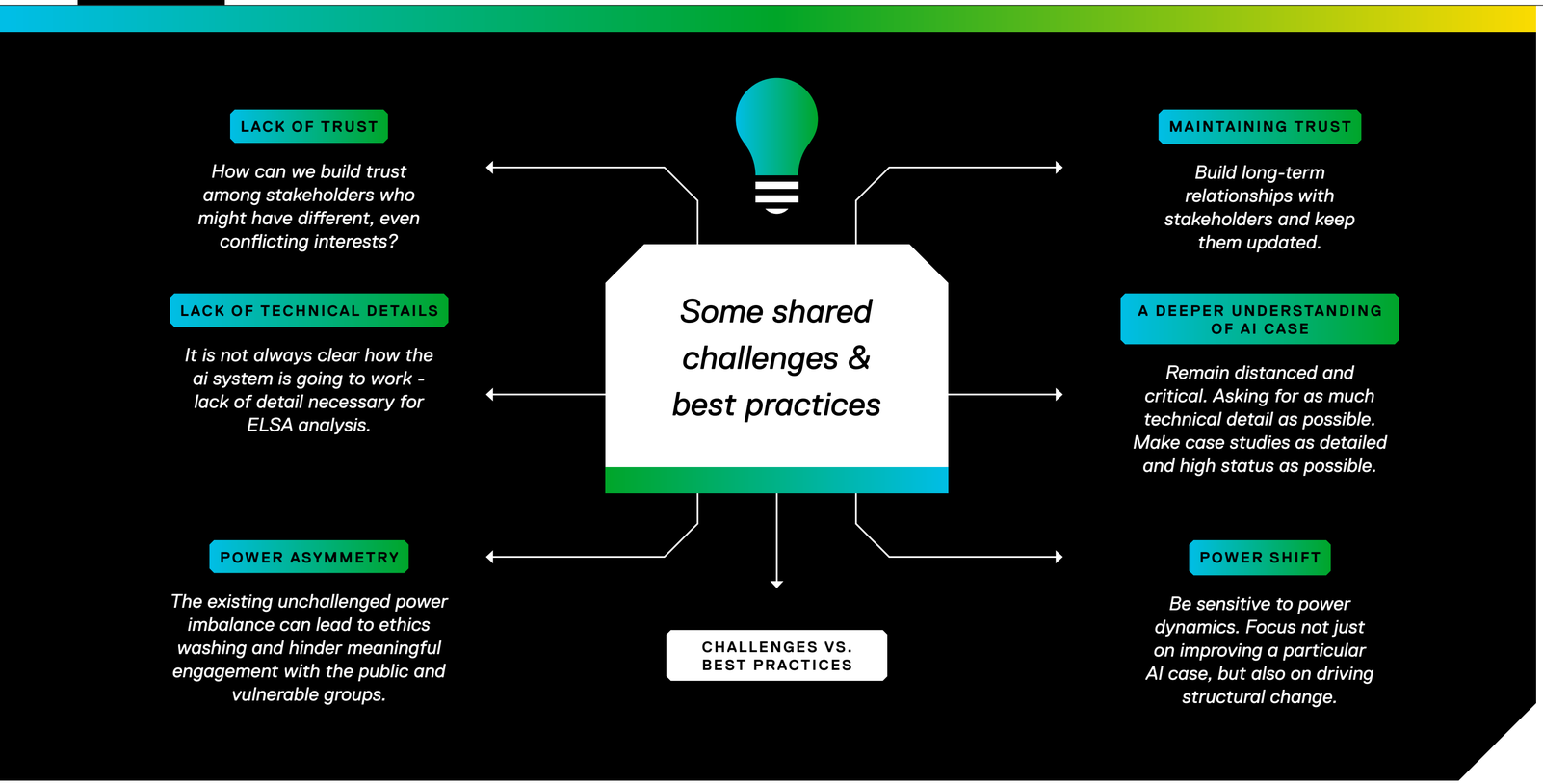
During the recent ELSA conference on June 13th 2024 in Wageningen, the focus was on methodology, emphasizing the need for a comprehensive approach to addres broader societal concerns such as surveillance, the exploitation of user information, and deskilling. To explore the practical workings of the ELSA labs, three workshops were conducted. The outcomes of these workshops provide valuable insights into the challenges and best practices across different ELSA Labs on key themes: ELSA impact, stakeholder engagement, and legal and governance issues.



Workshops: hidden effects, diverse interests and governance discourses

The ELSA Impact Workshop emphasized the importance of identifying the impact of ELSA in AI development. While it is crucial to address immediate issues, it is equally important to consider the hidden, long-term, structural effects that AI can have on society. During this workshop, we systematically identified ELSA issues within the AI design and implementation process, and explored best practices to address them effectively.

Engaging stakeholders in AI development is vital but challenging, especially when their interests conflict. **The Stakeholder Engagement Workshop** focused on how to effectively involve diverse stakeholders in ELSA Lab settings. We discussed the importance of building trust, understanding power dynamics, and creating inclusive environments where all voices are heard. Participants shared insights and best practices to enhance stakeholder collaboration and ensure that AI development is genuinely participatory.



How can we build effective partnerships? How do we create a colLaborative environment where ELSA Labs and consortium partners can learn together?
In our next magazine edition, we will focus on these colLaboration challenges and explore how to responsibly develop and implement human-centred AI through enhanced cooperation and shared learning. More on this here.

The Legal and Governance Workshop examined the application of current legal and governance frameworks to address ELSA issues. Participants explored how ELSA approaches can contribute to and transform existing legal and governance discourses. The workshop provided strategies and best practices for integrating these frameworks into AI development, ensuring that AI applications are not only innovative but also compliant and ethical.

Shared challenges and best practices
A total of 28 researchers from six ELSA Labs participated in the workshops, sharing valuable knowledge about challenges and best practices. Key discoveries were the importance of fostering and building trust, understanding the specifics of AI use cases, and recognizing power dynamics and imbalances. These challenges are central to many ELSA Labs.

The workshops revealed that ELSA Labs share common interests and face similar challenges in developing methodologies and engaging stakeholders. The Labs are deeply involved in co-designing processes, moving beyond checklists and technical fixes. Collaboration and stakeholder engagement are crucial elements of a holistic ELSA approach. However, enhancing colLaboration raises questions:

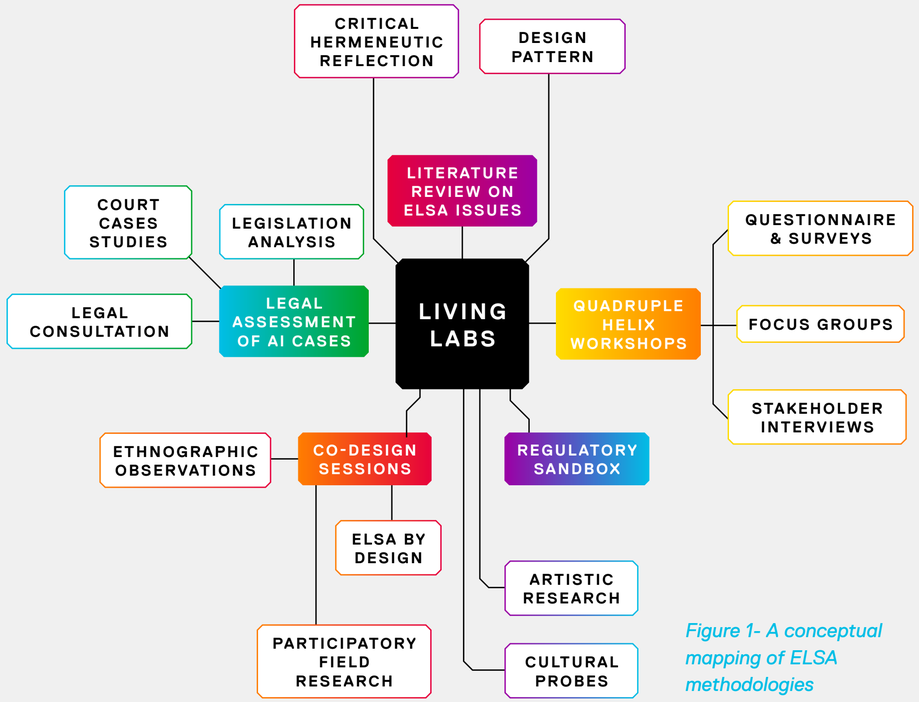


Figure 1- A conceptual mapping of ELSA methodologies

Conceptual mapping

The conceptual map developed at our conference (see above) highlights several shared principles among ELSA Labs that will serve as a foundation for future methodology development:

1. Tackling major societal challenges
2. Involving a wide range of stakeholders
3. Using experimental and iterative approaches

We also identified two new criteria not currently in the reference framework:

1. **Systemic Anticipation:** looking beyond specific AI cases to consider broader ethical, societal, and environmental aspects.
2. **Interdisciplinary Collaboration:** the need for cooperation between technical and social scientists.

These criteria indicate that while our current ELSA framework is a solid start, it needs expansion to fully encompass the holistic approach required for responsible AI development and implementation.

Interpreting ELSA's A

Finally, it is important to reconsider the term 'aspect' in ELSA (Ethical, Legal, and Societal Aspects). Is it a consequence, issue, impact, implication, or challenge? Interpretations vary among researchers, disciplines, and stakeholders. Technical scientists focus on immediate issues and crave technical details, while social scientists consider broader implications and cultural meanings. Achieving common understanding and goals requires enhanced colLaboration and interdisciplinary cooperation. Fostering this cooperation within and across ELSA Labs and among consortium partners is essential for responsibly addressing the diverse facets of AI.

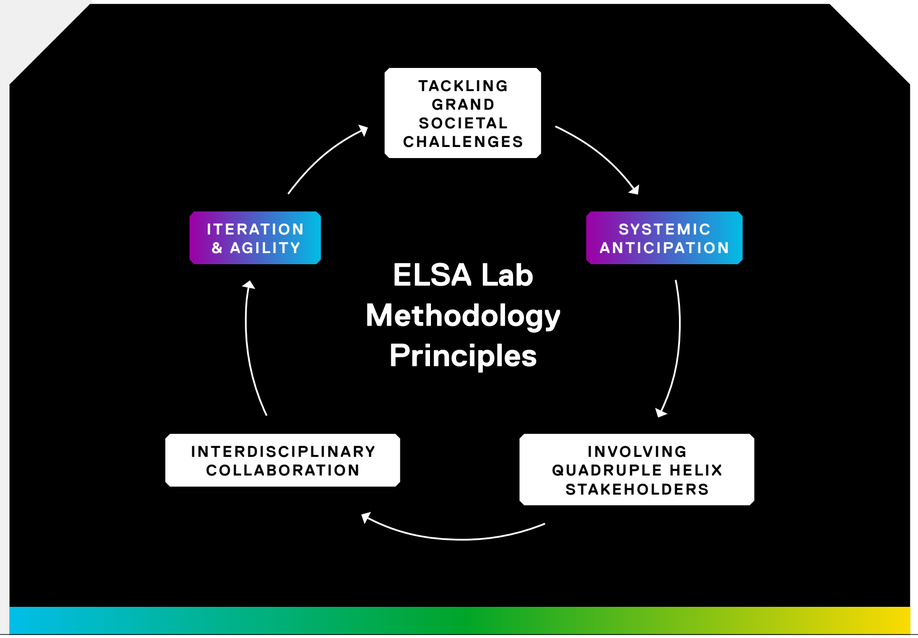


Figure 2 - Some shared principles in ELSA Lab methodologies

Future directions

Moving forward, ELSA Labs will focus on enhancing interdisciplinary colLaboration and refining the ELSA framework to include broader criteria such as systemic anticipation and interdisciplinary teamwork. This comprehensive approach ensures that AI development and implementation address both immediate and long-term societal impacts. The insights gained from the conference will guide future research and colLaborations, aiming to create a more cohesive and effective ELSA methodology that can adapt to the evolving AI landscape.

By embracing these lessons and fostering a colLaborative environment, ELSA Labs can continue to drive responsible and human-centred AI innovation, ensuring that technological advancements benefit society as a whole.

Next edition: stay tuned!

Annoyed at the spelling mistakes of colLaboration? Great! That not only makes you an observant reader, but also gives you the key hint to next years' theme: ColLaboration in the ELSA Labs

The importance of collaboration and stakeholder engagement in ELSA Labs cannot be overstated. Our next edition will focus on building effective partnerships and creating a colLaborative environment where ELSA Labs and consortium partners can learn together. We will explore how to foster trust, understand AI use cases, and recognize power dynamics and imbalances. Stay tuned for our next edition as we continue to explore how to responsibly develop and implement human-centred AI. Together, we can drive innovation that benefits society as a whole!

SDGs

One key aspect that connects all ELSA Labs to one another, but also to the wider context of AI for good, is that they are all connected to at least one Sustainable Development Goal (SDG). Aligning their individual missions with a collective goal not only helps maintain and encourage drive, but also provides additional opportunities for collaboration and reinforces the relevance of each Lab's activities.

The ELSA Labs in this magazine

1. ELSA AI Lab Northern Netherlands
2. ELSA Lab AI, Media & Democracy
3. ELSA Lab Defence
4. ELSA Lab AI 4 Sustainable Food Systems
5. ELSA Lab AI Multi-Agency Public Safety Issues
6. ELSA Lab Poverty and Debt

All other labs can be found here

Colophon

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The full ELSA Labs Portfolio

We cordially invite you to visit the NL AIC web page to learn more of the interesting and challenging initiatives of the other ELSA Labs.

7 ELSA Lab Healthy Society and AI

8 ELSA Lab Contestable Urban AI

9 ELSA Lab Public Policy

10 ELSA Lab Urban Digital Twin

11 ELSA Lab Cultural AI

12 ELSA Lab Smart and Responsible Mobility

13 ELSA Lab Meaningful Human Control over Public AI Systems

14 ELSA Lab Citizens and Society in the Energy Transition

15 ELSA Lab Intelligent and Inclusive Urban Mobility

16 ELSA Lab AI Digital Culture and Media

17 ELSA Lab AI4Access

18 ELSA Lab Sport Data Valley

19 ELSA Lab AI Solutions for Disability Care

20 ELSA Lab DataXchange

21 ELSA Lab AI4Youth

22 ELSA Lab AI-Approach to Low Literacy

23 ELSA Lab Centre of Expertise Applied AI

24 ELSA Lab Value Alignment in Medical AI

25 ELSA Lab AI for Health Equity

and more to come...

READ ALL ABOUT THE ELSA CONCEPT

ALL LAB LOCATIONS

SUSTAINABLE DEVELOPMENT GOALS