Master in Design for Responsible AI

How can we design critical thinking tools to anticipate, understand and address the complex impacts of AI systems in society and the environment?

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Master in Design for Responsible Artificial Intelligence

<u>Start date</u>
September

<u>ECTS credits</u>
60

<u>Course duration</u>
400 hours

<u>Language</u>
English

<u>Degree</u>
Master's Degree in Design for Responsible Artificial Intelligence

<u>Schedule</u>
Monday to Thursday.

<u>Director</u>
Andres Colmenares

<u>Admission Requirements</u>
Design graduates and professionals with experience in the public or private sector of the digital economy in areas related to tech, social innovation, culture or media. It is not essential to have a bachelor's degree to take this master's degree; we value professional experience as much as college education.

If you have doubts about whether you would be a good fit for this programme, please submit your request for a case-by-case evaluation.

Welcome to an eclectic way of learning how to think through AI systems

Artificial Intelligence (AI) is considered one of the most important technical developments of our times. Since its early origins in the late 1950s as a scientific discipline that aimed to simulate different forms of intelligence using machines, the term AI has been equally used by computer scientists, new media artists, tech journalists, investors, politicians and science fiction writers to refer in multiple ways to a fascinating speculation: that cognitive functions as learning, reasoning, perception or even creativity can be described and modelled with such accuracy that it would be possible to reproduce them using computers.

During the last decade, the exponential growth of computational power, planetary-scale data collection technologies and a data-driven media culture have enabled a wide range of successful applications of AI systems in areas such as natural language comprehension or image and speech recognition, accelerating the adoption of these systems across industries for process, task and decision automation at unprecedented scales, giving rise to crucial interrelated ethical, societal and environmental challenges in public and private sectors.

The emergence of Responsible AI
In recent years, as a way to address these challenges, different research institutions, governments and private companies around the globe, have developed robust research projects to design principles, guidelines, methodologies and tools for ethical, accountable and trustworthy AI systems and practices, often referred to as the emerging field of 'Responsible AI'. Responsible AI practices aim to understand AI as socio-technical systems to study the different impacts they have in society and the Planet, while designing theories, frameworks, methods and other tools for an ethical, legal, and sustainable development, deployment, governance and usage of AI systems.

There is a growing need in the public and private sectors, particularly in Europe, to provide tech workers from technical and non-technical backgrounds with a transversal set of capabilities and mindsets to collectively learn how to transform principles (ways of thinking) such as transparency, justice and fairness, non-maleficence, responsibility and privacy into action (ways of doing) to assess and mitigate risks, increase digital media literacy in the wider public and learn the best ways humanity can use these powerful technologies to address the socio-ecological implications of the environmental emergency and make possible the UN's Sustainable Development Goals for 2030.

Design as a critical thinking tool for systems change
The Master in Design for Responsible Artificial Intelligence (MDRAI) aims to address this need with a part-time programme for professionals interested in developing skills in creative research, context analysis, critical thinking and storytelling, and strategic decision-making while investigating the multiple ways in which AI systems are impacting our daily lives and engaging with complex questions emerging from wider issue areas related to digital technologies in sustainability, ethics and social justice from an intersectional and transdisciplinary perspective.

Programme

Our programme aims to create a collaborative learning environment for the individual and collective development of critical knowledge, skills and capabilities needed to anticipate, identify, investigate and address social, ethical, environmental and cultural challenges emerging from the application of AI systems.

The programme is partially informed by the insights and recommendations from the 'Framework for Trustworthy AI Education'1, part of the Erasmus+ project 'Trustworthy AI', with the goal of facilitating the introduction of the High-Level Expert Group's Guidelines on Trustworthy AI 2 (EUCommission, 2018) into Higher Education across disciplines and aligned with the EU's digital strategy, which emphasises the need to train professionals that can "shape technology in a way that respects European values".

Programme structure
The MDRAI program is a collaborative learning journey organised into 3 terms and 7 modules, offered in a low-residency mode which runs for 40 weeks over 10 months between September and June, where participants will expand the ways of thinking about AI and AI systems to better understand the technical foundations and state of the art of related technologies in a social context, alongside the full cycle for the design, development and evaluation of automated decision-making systems and their impact on society and the Planet.

Term I (September — December)
In this term, students alongside faculty and other guest collaborators, will interact to organise as a creative research collective around a self-assigned theme related to the Master's core topics that will run across the three terms of the program, as a way to practice and reflect on the power of collective intelligence.

You will also develop an advanced and multidimensional understanding of AI from its origins as a scientific discipline and its philosophical connotations to how AI systems work and are being used today in a wide range of contexts.

You will also explore and understand the state-of-art of AI systems, their true capabilities and limitations, as a way to enable students to communicate their knowledge in advanced and explainable terms across technical and non-technical disciplines, while exploring and investigating the multidimensional impacts of AI systems, guided by specialists and researchers working in different sectors and regions.

Module 1: Creative Research & Imagination Collaboratory
In this module, you will develop skills to work effectively as a member of groups and networks of people with different levels of expertise, cultural and professional backgrounds, while learning how to research and analyze specific themes in creative, collaborative and collective ways while cultivating reflective and intuitive ways of investigating complex topics.

We will also empower you to align your individual and collective learning experience with the cultural, ecological and societal transformations shaping this decade.

Main Activities:
A. Creating an R&I Collaboratory. A practical introduction to collaborative ways of learning, researching and cooperating while collectively deciding short and long-term goals, principles, guidelines and a manifesto.
B. Researching Creative Research. Through self-assigned collective research projects, workshops, reading groups and debates, students will explore, reflect on and practice creative research methods, from artistic to indigenous approaches, with guidance from a transdisciplinary network of mentors.
C. Designing for the Next Billion Seconds. Following a collective learning-by-doing approach, the students will explore, discuss, reflect, ideate and exchange perspectives, questions and thought experiments, while exercising their collective imaginations with long-term, critical and planetary mindsets to navigate the complexity, scale and speed of change of the multidimensional implications that AI systems and the digital economy have in the environmental emergency.

Module 2: Decoding AI Systems
Through lectures, tutorials, debates and workshops, in this module you will explore and interrogate, alongside specialists working with AI systems in diverse fields, the different dimensions and narratives of Intelligence, Artificial Intelligence, Automation and Automated Decision-Making Systems (ADMS), how these systems and technologies are being used by organizations across the public and private sector, and how new media artists, journalists and creative technologists are experimenting with these technologies.

Key Topics to be explored
○ What is AI?
○ Introduction to Machine Learning
○ Introduction to Neural Networks
○ History of AI
○ Philosophies of AI
○ Narratives of AI
○ How AI/ADM systems work
○ Applied AI services in public sector
○ Applied AI systems across industries
○ Creative AI: artistic perspectives

Module 3: AI Systems, Society and the Planet
In this module, you will develop a critical understanding of the socio-economic, socio-technical, and socio-ecological aspects of AI systems, alongside the ethical, social, environmental and cultural implications emerging from their use at scale.

You will also have the opportunity to engage with a broad set of perspectives on the key challenges and opportunities raised by AI systems in relation to the environmental emergency.

Key Topics to be explored
○ Introduction to Socio-Technical Systems
○ Social Justice, power structures and AI
○ Environmental impact of AI
○ Ethics of AI
○ Cultural impact of AI
○ Digital Sustainability
○ AI for Climate Emergency

Term II (January — March)
During this term students will engage in a critical study, analysis and discussion of the foundations of Responsible AI, the evolution of its legal dimension and different principles and guidelines for AI ethics in public and private sector, with a strong focus on the requirements for Trustworthy AI according to the High Level Expert Group on AI set by the European Commission.

Through lectures, case studies, debates and workshops, students will explore and analyze the practical dimensions of Responsible AI: how the guidelines and principles are being implemented, discussing and testing different impact assessment methods, technical and non-technical approaches, and tools to make AI explainable to the general public.

Module 4: Responsible AI/ Governance, Principles and Requirements
In this module you will develop an advanced and critical understanding of the legal, ethical and social dimensions of the theories shaping the emerging field of Responsible AI, while engaging in a critical analysis of the current landscape of AI policy initiatives around the world with a strong focus in the European context.

Key Topics to be explored
○ Introduction to Responsible and Trustworthy AI
○ AI Policy initiatives Overview: Focus on EU's AI Act
○ Guidelines on Trustworthy AI in Europe
○ Understanding the Key Requirements for Trustworthy AI:
    ○ Human agency and oversight
    ○ Technical robustness and safety
    ○ Accountability
    ○ Privacy and data governance
    ○ Transparency
    ○ Societal and environmental well-being
    ○ Diversity, non-discrimination and fairness

Module 5: Responsible AI/ From Principles to Implementation
In this module you will engage with a broad range of methods and practical approaches to identify and critically analyze the impacts and risks of AI systems in a wide scope of contexts, while developing analytical and creative skills to design methodologies and strategies for the implementation of Responsible AI guidelines with a strong focus on the explainability of AI.

Key Topics to be explored
○ Understanding impact assessment
○ Best practices in Machine Learning
○ Explainable AI
○ Design perspectives on Responsible AI
○ Designing a Responsible AI toolkit

Term III (April — June)

The last part of the programme is focus on a final project that will start with project team formations and formulation in Term II to be developed on Term III, including weekly design reviews and feedback from other students, design tutors and remote experts until the final public presentations, alongside group feedback and collective reflection sessions on the whole learning experience.

Module 6: Designing for Responsible AI: Final Projects
In this module, you will develop communication skills to share their research process and outcomes in ways that make them accessible to a wider public, while applying the knowledge gained during the master studies and the critical mindset and design skills in a Responsible AI project that contributes to common good.

Following the transdisciplinary nature of the programme, the final projects will reflect critical proposals of tools, methodologies, narratives and strategies, addressing global issues situated in translocal contexts, using a variety of media, techniques and formats, from video essays to design fictions, alongside a research report with the documentation of the research process.

Transversal Practice (September — June)

Through group discussions, editorial challenges, tutorials and workshops, students will apply and develop their learnings from other modules, while practising critical design and sharing their reflections with a wider audience in different formats, creating the conditions for students to exchange and engage with experts across different fields and regions, as part of their learning experience.

With guidance from specialists and collaborators, students will design and run a low-tech digital publication as an experimental media platform to share the outputs of their collective research and learning journeys.

Module 7: Critical Design/Media Lab for Responsible AI
In this module, you will develop skills to synthesise learnings and share knowledge in creative, collaborative and sustainable ways while cultivating a critical attitude towards design, tech and media.

We will create an open and distributed learning environment that facilitates the engagement of students individually and collectively during the Master, with a deep awareness of the societal, cultural and ecological context where students, alongside faculty and other guest collaborators, will design and run a low-tech digital publication as an experimental media platform to share the outputs of their collective research and learning journeys.

Methodology

The master is designed as a creative research collaboratory with a strong focus on collaborative and transdisciplinary learning offering participants a unique context to develop skills in investigating and analysing complex topics while specialising on the design and implementation of strategies, narratives, decision-making techniques and methodologies for Responsible AI systems to engage with a broad range of stakeholders.

Through in-person and remote lectures, group discussions, editorial challenges, tutorials and workshops, we will provide a broad, transdisciplinary and multicultural range of perspectives, approaches, methodologies and critical design and thinking tools that will enable you to learn how to communicate Responsible AI with professionals from other disciplines, as well as with citizens with different literacy levels.

There will be a strong focus on evolving the learning journey into a community of practice, growing a network of design-driven specialists in the multidimensional implications of AI systems, with a strong focus on the implementation of the guidelines and requirements developed by the European Commission around Trustworthy AI.

Values

The master comes from the intention to expand the understanding and exercise of design as a broad and plural decision-making practice, with a huge cultural relevance in the context of the environmental emergency that is shaping the current decade, through a set of universal values formulated in the Everything Manifesto3 (2019):
○ Design for humbleness
○ Design for responsibility & accountability
○ Design for plurality
○ Design for empathy & tolerance
○ Design for solidarity

These values also apply to the collaborative learning experience that will start with participants reaching consensus on a set of principles that will guide their individual and collective process, building from the Design Justice Network principles 4 which "rethinks design processes, centers people who are normally marginalized by design, and uses collaborative, creative practices to address the deepest challenges our communities face".

The experience

The Master in Design for Responsible AI is organised into three terms offered in a low-residency mode which runs for 40 weeks over 10 months. You will be expected to commit 10-12 hours per week to study, which includes teaching time and independent study.

Flexible learning

This course enables you to pursue your studies part-time while continuing in your full-time career. To offer a flexible format for professionals, guest faculty and collaborators from different regions to participate in this master, the programme is delivered via a blended part-time/remote learning journey, through weekly online synchronous group sessions in between 3 in-person residencies in Barcelona that will take place in the following dates:
○ Residency 1: September Kick-off week (1 week).
○ Residency 2: February-March. Design sprints and workshops for final project (10 weeks). Dates will be agreed with students in September.
○ Residency 3: June. Final project (1 week). Dates will be agreed with students in September.

Career opportunities

The widespread implementation and scale of AI systems in society, is feeding an increasing need for professionals who can think broadly and critically while communicating clearly about AI, automated decision-making and its ethical, environmental, cultural and societal implications, both within the tech companies developing those systems and across the private and public sectors.

As a specialist in Design for Responsible/Trustworthy AI, graduates will be equipped and well-placed to advance their careers in the tech sector, as well as in its intersection with areas such as media, consultancy, policy-making, public innovation, financial services or sustainability.

Who is this master for

The MDRAI is created for professionals with backgrounds in digital service design, strategic design and communications, interaction design, cultural management, political science, social innovation, journalism, trend research, data science or other technical disciplines as data or computer science related to AI systems, who are working in different areas of the digital economy, leading or participating in digital transformation projects across public institutions and private sector organisations.

Team

Director

ANDRES COLMENARES
Creative foresight strategist. Co-founder of IAM and co-director of the Billion Seconds Institute

Andres Colmenares is co-director and co-founder of IAM, a creative research lab that helps citizens and organizations make better decisions by using futures as tools to anticipate challenges and opportunities, emerging from the socio-ecological impacts of digital technologies and infrastructures.

In his role as a strategist, curatorial designer and creative foresight consultant he has led and developed partnerships with organizations such as NESTA, Tate, Red Bull, Centre for Investigative Journalism, WeTransfer, BBC, SPACE10 (IKEA's research and design lab) and the University of Arts London, where he developed an experimental learning programme focused on empowering young people to think critically about digital technologies through the design of speculative narratives between 2017-2019.

In 2018 he led the strategic design of Digital Future Society, a programme for the Mobile World Capital Foundation commissioned by the Government of Spain to connect experts, policymakers, civic organizations and entrepreneurs with the mission of understanding and engaging with the legal and ethical challenges and opportunities of digital transformation. He also facilitated sessions with academic, business and social innovation experts to set their 2030 horizon research agenda and designed a prototype of a Responsible AI toolkit for digital innovation teams in the public sector.

He is also co-director of The Billion Seconds Institute, a lifelong learning initiative to reimagine the digital economy and since 2015 he organizes IAM Weekend, the annual conference in Barcelona for creative professionals looking to collectively rethink the futures of the internet.

He is faculty of the Masters in Design for Emerging Futures at the Institute for Advanced Architecture of Catalonia/Elisava and has been invited as guest lecturer at institutions such as Merz Akademie (DE) and Berghs School of Communication (SE), as a curator for Design Does Forum (ES) and for the Branch Magazine Symposium at Ars Electronica Festival 2021 (AT), and as a keynote speaker at Digitally Engaged Learning (DEL) conference, ADC Festival (ES), Forward Festival (AT) and PRIMER EU, the leading futures thinking conference in Europe. In 2022 he will join the jury for the Grand prize of the European Commission honouring Innovation in Technology, Industry and Society stimulated by the Arts (S+T+ARTS).

The following list includes both regular tutors, workshop leaders, and lecturers. The list is not definitive and will be updated through the year.

Professors

- Ariel Guersenzvaig. Director of the Master in Design and Management of User Experience and Digital Services (Elisava).
- Filippo Cuttica. Co-founding member of art group IOCOSE.
- Xiaowei Wang. Lead facilitator of Logic School.
- Simone Rebaudengo. Product and interaction designer. Co-founder of oio.
- Michelle Thorne. Sustainable Internet Lead at the Mozilla Foundation. Senior advisor to the Green Web Foundation and co-organizer of Open Climate.
- Caroline Sinders. Founder of the Convocation Design+Research.
- Raziye Buse Çetin. Co-founder of the AI research, advocacy and art platform Dreaming Beyond AI.
- Martín Pérez Comisso. Researcher in Socio-Technical Systems.
- Nadia Piet. AIxDesign Founder.
- Abdelrahman Hassan. Digital Ethics Specialist at IKEA.

WHY GO BEYOND?

→ You can find out more about the Master in Design for Responsible AI at mastersbeyond.elisava.net

○ If you are a Bold Category Member of Elisava's Alumni Association, you may enjoy a 15% discount on our Master's tuition.
○ There may be some changes to the faculty for reasons beyond the course programme.
○ Elisava will make the necessary and appropriate changes in the programme or, in exceptional circumstances, cancel the programme altogether if the course has not reached the minimum number of students to ensure its proper functioning two weeks before its initiation. Elisava will only refund the amounts already paid by the students.
○ According to their specific necessities, the Master schedules may include additional hours, including during the weekend.