Mireia Yurrita Semperena

Postdoctoral Researcher · Human-Computer Interaction

Residence: Netherlands - Nationality: Spanish

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Education

PhD Human-Computer Interaction *July 2021 - May 2025*

Delft University of Technology - Delft, Netherlands

- Doctoral Thesis: "*Understanding Decision Subjects' Needs and Perceptions Towards Contestable AI systems*"
- Note: The doctoral thesis has already been approved by the promotors and committee members and will be defended on May 12th 2025

MSc Industrial Engineering *Sept 2018 - Dec 2020*

University of Navarra - San Sebastian, Spain

- Master Thesis conducted at Massachusetts Institute of Technology (MIT), Cambridge, USA.
- Master Thesis: "*Algorithmic Zoning: Pro-Social Incentive Implementation Using Agent-Based Modeling*" (graded 10/10)

BSc Industrial Technology Engineering *Sept 2014 - July 2018*

University of Navarra - San Sebastian, Spain

- Specialization in mechanical engineering.
- Bachelor Thesis: "*Development of a Mathematical Model for Measuring the Vibration Isolation Capacity of Magneto-Sensitive Rubber*" (graded 10/10)

Professional Experience

Postdoctoral Researcher *Jan 2025 - present*

Utrecht University - Utrecht, Netherlands

- I am part of the Hybrid Intelligence Centre, a consortium of AI researchers from major universities in the Netherlands working in areas that go from machine learning and natural language processing to psychology and law of technology.
- As part of my postdoc, I focus on the co-design of metrics and processes to measure and assess human-AI collaboration.
- Note: In the Netherlands, one can get access to a position as a postdoctoral researcher once the doctoral thesis is approved, even if it is still to be defended.

Doctoral Researcher and Marie Skłodowska-Curie Fellow *July 2021 - Dec 2024*

Delft University of Technology - Delft, Netherlands

- My doctoral research was positioned at the intersection of Human-AI Interaction and Algorithmic Fairness, Accountability, and Transparency.
- I developed conceptual frameworks and conducted empirical studies (qualitative and large-scale quantitative studies) to guide the development of contestable AI systems based on decision subjects' needs and perceptions.
- I visualized and analyzed the results of quantitative studies using R and Python. For qualitative studies, I relied on interviews and workshops, and analyzed the collected data using reflexive thematic analysis.
- The studies I conducted were inspired by policy interpretations such as "the right to contest" automated decisions outlined in Article 22(3) of the GDPR. By looking into decision subjects' needs and perceptions, I aimed to inform future human-centered AI development practices and policies.
- I gave 20+ presentations to both academic and industry audiences to disseminate research findings.

Hydraulic Design Engineer *Sept 2020 - June 2021*

Ingeteam - San Sebastian, Spain

- I was involved in the redesign and optimization of mixed-flow turbomachinery. I combined Computational Fluid Dynamics simulations on Axcent and Pumpal, with Machine Learning techniques on Python.
- I worked in close collaboration with the manufacturing and product quality teams to deliver optimal solutions that met the hydraulic requirements of the client.

Visiting Student *Sept 2019 - Aug 2020*

MIT Media Lab - Cambridge, USA

- I developed an algorithmic incentive systems on the GAMA platform for Agent-Based Modeling. I ran agent-based simulations and visualized their effects on urban metrics using Tableau.
- I built a surrogate model of the Agent-Based Model using Machine Learning techniques on Python to enable the real-time prediction of urban metrics.
- As part of the City Scope project, I contributed towards data-driven participatory decision-making processes in urban planning.

Mechanical Engineer Intern *Summer 2017, 2018*

Orona - San Sebastian, Spain

- During two summers I was involved in projects that entailed (1) the development of a calculation tool for vibration isolators on Matlab, (2) the creation of a tool to optimize the direction of lift cars on Matlab and (3) the design of a mock-up for testing load weighing sensors on Solidworks.

Student Assistant *June 2015 - Sept 2017*

University of Navarra - San Sebastian, Spain

- I was a collaborator in the Entry Level Mathematics Course for three years. I helped first-year engineering students refresh basic concepts of calculus and linear algebra.
- I studied the Laplace equation applied to turbine blades on Matlab.
- I developed a tool for the calculation of deformation, shear stress and bending moment in beams using the Method of the Finite Differences on Matlab.

Mentoring & Teaching Experience

2023 **Miny Rajiv**, Master Thesis, Explainable AI in the Dutch Public Sector
2022 **Seowoo Nam**, Research Elective, Multi-Stakeholder Value Deliberation for AI Systems

2024 **Machine Learning for Design**, Teaching Assistant
2023 **Crowd Computing**, Teaching Assistant
2023, 2024 **Artificial Intelligence and Society**, Guest Lecturer
2023, 2024 **Interdisciplinary AI Research Methods**, Guest Lecturer

Awards & Fellowships

2023 **Best Paper Award at the ACM CHI Conference**, ACM
Best Student Paper Award at the AAAI / ACM AIES conference, AAAI / ACM

2019 **International Connecting Talent Fellowship**, Fomento de San Sebastian
Global Internship Program Fellowship, Caja Rural de Navarra

2018 **Universidad de Navarra - Grupo Santander Fellowship**, Banco Santander

Languages

Basque, Native

Spanish, Native

English, Full Professional Proficiency, C1 Advanced, Cambridge

French, Full Professional Proficiency, Diplôme Approfondi de Langue Française C1

German, Elementary Proficiency, Goethe-Zertifikat B2

Publications

Timothée Schmude, **Mireia Yurrita**, Kars Alfrink, Thomas Le Goff, Tiphaine Viard. "Two Means to an End Goal: Connecting Explainability and Contestability in the Regulation of Public Sector AI". Under review in: *ACM Conference on Fairness, Accountability, and Transparency* (FAccT'25) (2025).

Mireia Yurrita, Himanshu Verma, Agathe Balayn, Kars Alfrink, Ujwal Gadiraju, Alessandro Bozzon. "Personalize, Prioritize, Collectivize: Identifying Algorithmic Decision Subjects' Needs for Meaningful Contestability". In *Proceedings of the ACM on Human-Computer Interaction CSCW* (CSCW '25) (2025)

Agathe Balayn, **Mireia Yurrita**, Fanny Rancourt, Fabio Casati, Ujwal Gadiraju. "Trust Dynamics in the LLM Supply Chain: An Empirical Exploration to Foster Trustworthy LLM Production & Use". In: *CHI Conference on Human Factors in Computing Systems* (CHI'25) (2025).

Mireia Yurrita, Himanshu Verma, Agathe Balayn, Ujwal Gadiraju, Sylvia Pont, Alessandro Bozzon. "Towards Effective Human Intervention in Algorithmic Decision-Making: the Effect of Decision-Makers' Configuration on Decision-Subjects' Fairness Perceptions". In: *CHI Conference on Human Factors in Computing Systems* (CHI'25) (2025).

Andrea Tocchetti*, Lorenzo Corti*, Agathe Balayn*, **Mireia Yurrita**, Philip Lippmann, Marco Brambilla, Jie Yang. "AI Robustness: a Human-Centered Perspective on Technological Challenges and Opportunities". In: *ACM Computing Surveys* (2024).

Chadha Degachi*, Siddharth Mehrotra*, **Mireia Yurrita**, Evangelos Niforatos, Myrthe Lotte Tielman. "Practising Appropriate Trust in Human-Centred AI Design". In: *Extended Extended Abstracts of the CHI Conference on Human Factors in Computing Systems.* (CHI EA'24) (2024).

Kars Alfrink, Ianus Keller, **Mireia Yurrita**, Denis Bulygin, Gerd Kortuem, Neelke Doorn. "Envisioning Contestability Loops: Evaluating the Agonistic Arena as a Generative Metaphor for Public AI". In: *She Ji: The Journal of Design, Economics, and Innovation* (2024).

Agathe Balayn, **Mireia Yurrita**, Jie Yang, Ujwal Gadiraju. "Fairness Toolkits, A Checkbox Culture? On the Factors that Fragment Developers' Practices in Handling Algorithmic Harms". In: *Proceedings of the AAAI/ACM Conference on AI, Ethics, and Society* (AIES'23) (2023). 🏆

Mireia Yurrita, Tim Draws, Agathe Balayn, Dave Murray-Rust, Nava Tintarev, Alessandro Bozzon. "Disentangling Fairness Perceptions in Algorithmic Decision-Making: the Effects of Explanations, Human Oversight, and Contestability". In: *CHI Conference on Human Factors in Computing Systems* (CHI'23) (2023). 🏆

Mireia Yurrita, Dave Murray-Rust, Agathe Balayn, Alessandro Bozzon. "Towards a multi-stakeholder value-based assessment framework for algorithmic systems". In: *ACM Conference on Fairness, Accountability, and Transparency* (FAccT'22) (2022).

Mireia Yurrita, Arnaud Grignard, Luis Alonso, Yan Zhang, Cristian Ignacio Jara-Figueroa, Markus Elkatsha, and Kent Larson. Dynamic urban planning: an agent-based model coupling mobility mode and housing choice. Use case Kendall Square. In *Intelligent Computing: Proceedings of the 2021 Computing Conference*

Workshop Papers

Agathe Balayn, **Mireia Yurrita**, Fanny Rancourt, Fabio Casati, Ujwal Gadiraju. "An Empirical Exploration of Trust Dynamics in LLM Supply Chains" In: *Workshop on Trust and Reliance in Evolving Human-AI Workflows at CHI* (TREW'24) (2024)

Mireia Yurrita, Agathe Balayn, Ujwal Gadiraju. 2023. "Generating Process-Centric Explanations to Enable Contestability in Algorithmic Decision-Making: Challenges and Opportunities". In: *Human-Centered XAI Workshop at CHI* (HCXAI'23) (2023).

Mireia Yurrita, Arnaud Grignard, Luis Alonso, and Kent Larson. "Real-Time Inference of Urban Metrics Applying Machine Learning to an Agent-Based Model Coupling Mobility Mode and Housing Choice". In *Multi-Agent-Based Simulation XXII: 22nd International Workshop, MABS* 2021.

Workshop Organization

Agathe Balayn, Yulu Pi, David Gray Widder, Kars Alfrink, **Mireia Yurrita**, Sohini Upadhyay, Naveena Karusala, Henrietta Lyons, Cagatay Turkay, Christelle Tessono, Blair Attard-Frost, Ujwal Gadiraju. "From Stem to Stern: Contestability Along AI Value Chains". 2024. Workshop at the *ACM Conference on Computer-Supported Cooperative Work and Social Computing*.

Wesley Hanwen Deng, **Mireia Yurrita**, Mark Díaz, Jina Suh, Nick Judd, Lara Groves, Hong Shen, Motahhare Eslami, Kenneth Holstein. "Responsible Crowdsourcing for Responsible Generative AI: Engaging Crowds in AI Auditing and Evaluation". 2024. Workshop at the *AAAI Conference on Human Computation and Crowdsourcing*.