Sara Magliacane

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Recent work experience

Mar. 2026 - **current** **Full Professor at Saarland University**.

Nov. 2020 - Mar. 2026 **Assistant Professor (tenured since Nov. '23) at University of Amsterdam**.

Mar. 2026 - Mar. 2027 (part-time)

- Causal representation learning, causal discovery, causality-inspired ML/RL, applications of causality to transfer learning and domain adaptation, safe reinforcement learning.
- Groups: Amsterdam ML Lab (from Nov. '22), Intelligent Data Engineering Lab.
- Teaching: Causal Data Science (MSc Data Science '22, '23, '24, '25), Causality (MSc AI '23, '24), guest lectures in Intro to AI (BSc AI '21, '22, '23), Causality & DL module for Deep Learning 2 (MSc AI '22, '23).
- Grant acquisition:
  - PI on NWO VIDI Project "CANES: a CAusal NEuro-Symbolic approach to integrating perception and abstract reasoning" (funding acquired: €850k),
  - PI on internal AI4Fintech project "Robust fraud detection through causality-inspired ML" (funding acquired: €320k, 1 PhD student),
  - PI on UvA-Adyen collaboration project (funding acquired: in total 2 PhD student, €1M), responsible for causality work package (1 PhD student),
  - PI on AFRL proposal "CausalFusion: Causal Knowledge Extraction and Fusion from Multiple Modalities" (funding acquired: €305k, 1 PhD student)

Apr. 2022 - June 2022 **Visiting Professor at Simons Institute, UC Berkeley for Causality semester**.

Apr. 2019 - Nov. 2020 **Research Scientist at MIT-IBM Watson AI Lab**.

Feb. 2021 - May 2024 (part-time)

- PI on exploratory MIT-IBM project with Douglas Lauffenburger (MIT) on cross-species translation and applications of causal domain adaptation and representation learning to system biology (funding acquired by MIT: $150k).
- PI on MIT-IBM project with Armando Solar-Lezama (MIT) on safe AI approaches and program synthesis (funding acquired by MIT: $700k)
- Co-PI on MIT-IBM project with Dean Eckles (MIT) and Manish Raghavan (MIT) on differentially private causal inference (funding acquired by MIT: $700k).

Nov. 2017 - Apr. 2019 **Postdoctoral researcher at AI Foundations group in IBM Research NY**.

- MIT-IBM project on learning causal graphs from data, experiment/intervention design, causal transfer learning with Caroline Uhler (MIT) and Guy Bresler (MIT).
- MIT-IBM project on learning logic rules from data with Josh Tenenbaum (MIT).

Mar. 2016 - Nov. 2017 **Researcher at Causality Group at University of Amsterdam**.

Causal transfer learning and causal learning from data in different experimental settings.

May 2014 - Aug. 2014 **Research Intern at Google Research NYC (hosts: Cong Yu, Flip Korn)**.

Extracting information from semi-structured data in the WebTables team.

June 2013 - Sept. 2013 **Software Engineering Intern at Google Zürich (host: Selen Basol)**.

Machine learning on location data in the Your Timeline team, Google Maps Zürich.

Education

Oct. 2011 - June 2017 **PhD in Computer Science at VU Amsterdam**.

Title: Logics for causal inference under uncertainty
Advisors: Joris Mooij (UvA), Paul Groth (Elsevier Labs/VU), Frank van Harmelen (VU)

- Use of probabilistic logics for discovering causal relations from noisy data, potentially with latent confounders and different experimental settings.
- Scaling probabilistic logic inference, focusing on a probabilistic fuzzy logic (PSL) with a distributed implementation of ADMM for MAP inference in continuous MRF.
- Teaching: TA for Intelligent Systems (BSc AI '13, '14), Course coordinator for Seminar "Combining Symbolic and Statistical methods in AI" (MSc AI '16).

Oct. 2008 – Mar. 2011 **MEng in Computer Engineering (110/110 cum laude) at Politecnico di Milano and Politecnico di Torino (double degree)**.

Top 5 recent publications

NeurIPS 2026 M. Schubert, T. Aslanidis, T. Claassen, **S. Magliacane**. *Integrating Background Knowledge for Scalable Causal Discovery.*

ICML 2026 R. Hulsman, C. Balsells-Rodas, **S. Magliacane**. *Identifiable Markov Switching Models with Instantaneous Effects and Exponential Families.*

AISTATS 2026 M. Schubert, T. Claassen, **S. Magliacane**. *Local Causal Discovery for Statistically Efficient Causal Inference.*

AISTATS 2026 D. Xu, S. Lachapelle, **S. Magliacane**. *Identifiability of Potentially Degenerate Gaussian Mixture Models With Piecewise Affine Mixing.*

NeurIPS 2025 H. Fokkema, T. van Erven, **S. Magliacane**. Sample-efficient learning of concepts with theoretical guarantees: from data to concepts without interventions.

Other publications Google Scholar profile, Personal webpage

Recent awards

2024 ELLIS Scholar - Interactive Learning and Interventional Representations.

2021 ACM HSCC Best paper award for [Hunt et al. 2021] *Verifiably Safe Exploration for End-to-End Reinforcement Learning*.

2015 First prize at Centre de Recherches Mathématiques Causal Inference Challenge.

Keynotes, invited talks and invited workshops

Keynote Speaker Probabilistic Graphical Models 2024, ELLIS Doctoral Symposium 2023, Young European Statisticians Causal Inference workshop 2023, Danish Data Science 2022, CausalItaly 2021, Causal Data Science meeting 2021

Invited lectures Lectures at SIKS course on RL for Adaptive Hybrid Intelligence, SIKS causal inference course 2023, Barcelona School of Economics at the ML and causality course 2023, Advanced ML for innovative Drug Discovery Summer School 2022, Advanced in AI summer school lecture in Como 2022, SIKS course Integrating Learning and Reasoning 2021.

Invited Speaker 27+ invited talks at international venues, with audiences ranging from machine learning and data science to statistics, healthcare and robotics, e.g. Harvard Data Science Initiative Causal Seminar 2024, CVPR workshop on Causal and Object centric representations for robotics 2024, ICML Spurious Correlations Workshop 2023, IROS workshop on Causality for Robotics 2023, KNAW Webinar "Causality in economics, computer science, logic and language". Additionally various invited talks at U Edinburgh, U Copenhagen, IIT Genoa, MIT, KTH, IST Lisboa, TU Berlin, Booking.com, U Oslo etc.

Invited participant Bellairs Causal Representation Learning workshop 2023, 2024, 2025, Lorentz center workshop on Counterfactual Prediction for Personalized Healthcare 2022, Dagstuhl 2024 Explainability in Focus: Advancing Evaluation through Reusable Experiment Design , Dagstuhl 2024 Artificial Intelligence and Formal Methods Join Forces for Reliable Autonomy, Dagstuhl 2022 Recent Advancements in Tractable Probabilistic Inference, Dagstuhl 2021 Approaches and applications of inductive programming.

Academic service and event organization

Conference organizer (Co)-organized various conferences, as general chair (UAI 2026), program chair (UAI 2025), sponsorship chair (CLeaR 2022), proceedings chair (UAI 2022), communication chair (CLeaR 2023 and 2025), online chair (UAI 2023) and volunteer chair (ICLR 2024).

Workshop organizer	Organized various workshops, mostly on causality, including at ICLR 2026, NeurIPS 2024, 2023, 2022, 2020 and UAI 2024, 2023, 2022 & 2021.
Event organizer	ELLIS sponsored Amsterdam Causality Meeting
Moderator	Online Causal Inference Seminar
Area editor	2021-2025: causality area editor at International journal of Approximate Reasoning, Elsevier
Special issue editor	Causality issue in IEEE Transactions on Neural Networks
Area-chair	Area chair for various ML conferences since 2023, e.g. AISTATS 2027 (Senior AC), ICLR 2027, CLeaR 2027, ICML 2027, ICML 2026, NeurIPS 2025, UAI 2024, CleaR 2024, AAAI 2023, UAI 2023, CleaR 2023
Reviewer	Machine learning reviewer since 2016 for conferences (NeurIPS, ICML, ICLR, AISTATS, UAI, AAAI, IJCAI) and journals (JMLR, TMLR, IEEE TNNLS, Nature Machine Intelligence, PNAS), Cambridge University Press review for chapter in "Causal Reasoning" by Kiciman and Sharma
Mentor	Women in Machine Learning 2017-2021, HackMIT 2019, 2020, AISTATS 2022

PhD student Supervision

PhD advisor

- Graduated:
  - Feb. '25: Phillip Lippe (University of Amsterdam, co-supervised with E. Gavves, T. Cohen and Y. Asano)
  - Feb. '25: Riccardo Massidda (ELLIS PhD student at University of Pisa, co-supervised with D. Bacciu)
- Advising since 2023:
  - Mátyas Schubert (ELLIS PhD student at University of Amsterdam, co-supervised with Ricardo Silva, Herke van Hoof),
  - Danru Xu (ELLIS PhD student at University of Amsterdam, co-supervised with Aapo Hyvarinen, Paul Groth),
  - Nadja Rutsch (VU University Amsterdam, co-supervised with Stephanié van der Pas),
- Advising since 2024:
  - Roel Hulsman (University of Amsterdam, co-supervised with Herke van Hoof)
- Advising since 2025:
  - Yi Han (University of Amsterdam, co-supervised with Frans Oliehoek, Herke van Hoof)
  - Thomas Wessels (Utrecht, co-supervised with Shihan Wang, Mehdi Dastani)
- Advising since 2026:
  - Gaetano Tedesco (University of Amsterdam, co-supervised with Herke van Hoof)
  - Nico Metger (University of Amsterdam, co-supervised with Herke van Hoof)
  - Abdelrahman Abdelnaby (Saarland University)

PhD committee	Stephan Bongers (UvA), Qi Wang (UvA), Maximilian Ilse (UvA), Kirthan Padh (Helmholtz AI), Mike Huisman (Leiden), Ali Vardasbi (UvA), Miguel Suau de Castro (TU Delft), Jin Huang (UvA), Jan Wöhlke (UvA), Ghadi Al Hajj (University of Oslo), Sindy Löwe (UvA), Emanuele Marconato (U Trento), Shimeng Huang (U Copenhagen), Christine Bang (Bremen), Ehsan Mokhtarian (EPFL), Zehao Xiao (UvA), Shashank Gupta (UvA), Martina Cinquini (U Pisa), Sarah Mameche (Saarland University)
Thesis advisor	Advised 4 Master theses in IS, 15 Master theses in AI, 2 Bachelor theses in KI.
Intern mentor at IBM	Mentored Chandler Squires (MIT), Basil Saeed (MIT), Biwei Huang (CMU).