

Matteo Bortolotto

Ph.D. Student at the University of Stuttgart

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EDUCATION

University of Stuttgart, Germany	Ph.D. in Computer Science	2022 - Present
Advisor: Andreas Bulling		
University of Padua, Italy	M.Sc. in Physics of Data, <i>cum laude</i>	2019 - 2021
Advisor: Marco Baiesi		
University of Padua, Italy	B.Sc. in Physics	2016 - 2019
Advisor: Samir Suweis		

RESEARCH & WORK EXPERIENCE

University of Stuttgart, Stuttgart, Germany	2022 - Present
<i>Scientific Researcher</i> – Conducted research at the CAI group, with a focus on Machine Theory of Mind and large foundation models. Published 9 papers at top AI venues (AAAI, ACL, EMNLP, TMLR, ECAI), plus 2 preprints currently under review.	
Johns Hopkins University, Baltimore, USA	2025
<i>Visiting Graduate Scholar</i> – Conducted research at the SCAI Lab, leading a project with collaborators from JHU, Harvard, MIT, and PKU. Focus: Bayesian Inverse Planning, Large Language and Reasoning models.	
Piratech, Kingston Upon Thames, London, England (Remote)	2021
<i>Research Intern</i> – Awarded a research fellowship from the University of Padua to work on the project “Urban Big Data for Economic Development”.	

PEER-REVIEWED PUBLICATIONS

1. M. Bortolotto, C. Ruhdorfer, A. Bulling. “ToM-SSI: Evaluating Theory of Mind in Situated Social Interactions.” **EMNLP 2025**.
2. M. Bortolotto, C. Ruhdorfer, L. Shi, A. Bulling. “Brittle Minds, Fixable Activations: Understanding Belief Representations in Language Models.” **EMNLP 2025 Findings** and **ICML 2024 Workshop on Mechanistic Interpretability**.
3. C. Ruhdorfer, M. Bortolotto, A. Penzkofer, A. Bulling. “The Overcooked Generalisation Challenge.” **TMLR**, 2025.
4. C. Ruhdorfer, M. Bortolotto, A. Bulling. “The Yokai Learning Environment: Tracking Beliefs Over Space and Time.” **IJCAI 2025 Worshop on Theory of Mind**. (Oral)
5. M. Bortolotto, C. Ruhdorfer, L. Shi, A. Bulling. “Explicit Modelling of Theory of Mind for Belief Prediction in Nonverbal Social Interactions.” **ECAI 2024**. (Oral)
6. M. Bortolotto, C. Ruhdorfer, A. Abdessaied, L. Shi, A. Bulling. “Limits of Theory of Mind Modelling in Dialogue-Based Collaborative Plan Acquisition.” **ACL 2024**.
7. M. Bortolotto, L. Shi, A. Bulling. “Neural Reasoning About Agents’ Goals, Preferences, and Actions.” **AAAI 2024**.
8. E. Sood, L. Shi, M. Bortolotto, Y. Wang, P. Müller, A. Bulling. “Improving neural saliency prediction with a cognitive model of human visual attention.” **CogSci 2023**.
9. G. Zhang, M. Bortolotto, Z. Hu, L. Shi, M. Bâce, A. Bulling. “Exploring Natural Language Processing Methods for Interactive Behaviour Modelling.” **INTERACT 2023**.  **Best Student Paper Nomination**

ACADEMIC SERVICES

Mentoring: Supervised 8 B.Sc/M.Sc theses, including one  *Rul Gunzenhäuser Award* winner

Teaching: "Machine Perception and Learning" (teaching assistant/course organiser), "Computational Theory of Mind and Cognition" (course organiser & lecturer)

Reviewer: CHI'24, CHI'25, ACL ARR'25, TOCHI, UIST'25, AAAI'26

Student Volunteer: AAAI'24, ACL'24, EMNLP'25

AWARDS

Volunteer Scholarship: AAAI'24, ACL'24, EMNLP'25

Best Student Paper Nomination, INTERACT 2023

Winner Startup, StartCup Veneto, TooBusy

2021

Research Grant, University of Padua, "Urban Big Data for Economic Development"

2021

EVENTS AND PRESENTATIONS

EMNLP 2025 poster presentations	2025
Invited talk at the SCAI Lab, Johns Hopkins University	2025
ECAI 2024 oral presentation	2024
ACL 2024 poster presentation	2024
ICML 2024 poster presentation	2024
ELLIS CoGenAI Summer School (Aalto University, Finland)	2024
ELLIS Unit Stuttgart Summer Symposium	2024
AAAI 2024 poster presentation	2024
ELLIS Unit Stuttgart Kickoff Symposium	2023
Dagstuhl Seminar on Anticipatory Human-Machine Interaction	2022

MISCELLANEOUS

Nationality: Italian

Languages: English (fluent), Italian (native), Spanish (basic), German (basic)

Programming: Python, PyTorch, Huggingface, NNsight, Julia

Software & Tools: Linux, MacOS, Git, L^AT_EX, Microsoft Suite

Hobbies and activities: Watercolour painting, guitar, running