Matteo Bortoletto

Ph.D. Candidate at the University of Stuttgart

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EDUCATION

Ph.D. in Computer Science *2022 - Present*
University of Stuttgart, Germany
Thesis: "Multi-Modal Collaborative Theory of Mind" (Advisor: Andreas Bulling)

M.Sc. in Physics of Data, *cum laude* *2019 - 2021*
University of Padua, Italy
Thesis: "Study of performances for Restricted Boltzmann Machines" (Advisor: Marco Baiesi)

B.Sc. in Physics *2016 - 2019*
University of Padua, Italy
Thesis: "Oscillations in stochastic population dynamics models" (Advisor: Samir Suweis)

PUBLICATIONS

Matteo Bortoletto, Constantin Ruhdorfer, Adnen Abdessaied, Lei Shi, Andreas Bulling. "Limits of Theory of Mind Modelling in Dialogue-Based Collaborative Plan Acquisition." In *Proceedings of the 62nd Annual Meeting of the Association for Computational Linguistics (ACL)*, 2024.

Matteo Bortoletto, Lei Shi, Andreas Bulling. "Neural Reasoning About Agents' Goals, Preferences, and Actions." In *Proceedings of the 38th AAAI Conference on Artificial Intelligence (AAAI)*, 2024.

Guanhua Zhang, **Matteo Bortoletto**, Zhiming Hu, Lei Shi, Mihai Bâce, Andreas Bulling. "Exploring Natural Language Processing Methods for Interactive Behaviour Modelling." In *Proceedings of Conference on Human-Computer Interaction (INTERACT)*, 2023. ⚲ Best Student Paper Nomination

Ekta Sood, Lei Shi, **Matteo Bortoletto**, Yao Wang, Philip Müller, Andreas Bulling. "Improving neural saliency prediction with a cognitive model of human visual attention." In *Proceedings of the Annual Meeting of the Cognitive Science Society (CogSci)*, 2023.

TEACHING EXPERIENCE

Course Organiser and Teaching Assistant, Machine Perception and Learning *WS 2024*
Course Organiser and Lecturer, Computational Theory of Mind and Cognition *SS 2024*
Teaching Assistant, Machine Perception and Learning *SS 2022, WS 2022, WS 2023*

MENTORING

Jann-Philip Thewes, M.Sc. Thesis: "Multimodal LLM for Theory of Mind Modelling in Collaborative Tasks"
Ruben Werbke, B.Sc. Thesis: "Inferring Other Agents' Goal in Collaborative Environments Using Graphs"
Constantin Ruhdorder, M.Sc. Thesis: "Into the Minds of the Chefs: Using Theory of Mind for Robust Collaboration with Humans in Overcooked" ⚲ Rul Gunzenhäuser Award
John Pravin Arockiasamy, M.Sc. Research Project: "Transformer Based Architecture for Belief Prediction in Object-Context Scenarios"
Michael Erdemann, M.Sc. Thesis: "Recreating False-Belief Tests as Visual Question Answering Tasks"

WORK EXPERIENCE

University of Padua, Research Fellow *Mar 2021 - May 2021*
Piratech, Software Developer Intern *Mar 2021 - May 2021*

SERVICES

Reviewer: CHI'24
Student Volunteer: AAAI'24

AWARDS

Scholarship AAAI'24	*2024*
Best Student Paper Nomination INTERACT'23	*2023*
StartCup Veneto Start up competition winner, TooBusy	*2021*
Research Grant, University of Padua, "Urban Big Data for Economic Development"	*2021*

SKILLS

Languages: English (fully proficient), Italian (native), Spanish (good), German (basic)
Programming: Python, Bash, R, HTML, C++, Fortran
LLMs: PyTorch, Huggingface, NNsight, LangChain
Software & Tools: Linux, MacOS, Git, LaTeX, Microsoft Suite
Hobbies and activities: Watercolour painting, playing the guitar, swimming, bodyweight exercise