Matteo Bortoletto

Ph.D. Candidate at the University of Stuttgart

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EDUCATION

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

University of Padua, Italy   *2019-2022*
M.Sc. in Physics of Data, *cum laude*
Thesis Title: "Study of performances for Restricted Boltzmann Machines" (Advisor: Marco Baiesi)

University of Padua, Italy   *2016-2019*
B.Sc. in Physics
Thesis Title: "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 IFIP TC13 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 Coordinator 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 Modeling in Collaborative Tasks", 2024.
Ruben Werbke, B.Sc. Thesis: "Inferring Other Agents' Goal in Collaborative Environments Using Graphs", 2024.
Constantin Ruhdorder, M.Sc. Thesis: "Into the Minds of the Chefs: Using Theory of Mind for Robust Collaboration with Humans in Overcooked", 2023. ⚥ Rul Gunzenhäuser Award
John Pravin Arockiasamy, M.Sc. Research Project: "Transformer Based Architecture for Belief Prediction in Object-Context Scenarios", 2023.
Michael Erdemann, M.Sc. Thesis: "Recreating False-Belief Tests as Visual Question Answering Tasks", 2023.

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

AAAI'24 Scholarship	*Feb 2024*
StartCup Veneto Start up competition winner, TooBusy	*Aug 2021*
Research Grant, University of Padua, "Urban Big Data for Economic Development"	*Mar 2021*

SKILLS

Languages: English (fully proficient), Italian (native speaker), Spanish (good), German (basic)
Programming Languages: Python, Bash, R
Python Packages: PyTorch, Huggingface, Pandas, Numpy, Scipy, Jupyter, LangChain
Software & Tools: Linux, MacOS, LaTeX, Microsoft Suite

HOBBIES AND ACTIVITIES

Watercolour painting, music, reading, cinema, bodyweight exercise.