Thomas Kleine Buening

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Education

University of Oslo — *Oslo, Norway*
PhD in Computer Science — *Jan 2021 - Feb 2024*
- Topics: Reinforcement Learning, Algorithmic Game Theory
- Advised by Christos Dimitrakakis
- Thesis: Learning in the Presence of Cooperative, Adversarial and Strategic Agents

University of Münster — *Münster, Germany*
MSc in Mathematics — *Oct 2018 - Sept 2020*
- Graduated with Distinction. Grade: 1.0 (equivalent GPA: 4.0/4.0)
- Topics: Probability Theory, Stochastic Processes, Stochastic Analysis
- Thesis: Branching in Random Environment and Linear Fractional Distributions

University of British Columbia — *Vancouver, Canada*
Visiting Student in the Probability Group — *Jun 2019 - Dec 2019*
- GPA: 94/100
- Topics: Stochastic Analysis
- Hosted by Edwin Perkins

University of Münster — *Münster, Germany*
BSc in Mathematics — *Oct 2014 - Sept 2017*
- Grade: 1.9 (equivalent GPA: 3.1/4.0)
- Minor in Computer Science
- Thesis: Optimal Stopping in Discrete Time

Research Experience

The Alan Turing Institute — *London, United Kingdom*
Postdoctoral Research Associate — *Mar 2024 - current*
- Advised by Marta Kwiatkowska and Lukasz Szpruch
- Topics: Reinforcement Learning, Algorithmic Game Theory, Robustness and Certifiability

University of Oxford — *Oxford, United Kingdom*
Associate Member of the Department of Computer Science — *Mar 2024 - current*
- Affiliation: Trinity College (MCR)
- Topics: Reinforcement Learning, Algorithmic Game Theory, Robustness and Certifiability

Publications and Preprints

Strategic Linear Contextual Bandits
Thomas Kleine Buening, Aadirupa Saha, Christos Dimitrakakis, Haifeng Xu
working paper, 2024, [pdf]

Environment Design for Inverse Reinforcement Learning
Thomas Kleine Buening*, Villin Victor*, Christos Dimitrakakis
International Conference on Machine Learning (ICML), Oral Presentation, 2024, [pdf]

Bandits Meet Mechanism Design to Combat Clickbait in Online Recommendation
Thomas Kleine Buening, Aadirupa Saha, Christos Dimitrakakis, Haifeng Xu
International Conference on Learning Representations (ICLR), Spotlight Presentation, 2024, [pdf]

ANACONDA: An Improved Dynamic Regret Algorithm for Adaptive Non-Stationary Dueling Bandits
Thomas Kleine Buening, Aadirupa Saha
International Conference on Artificial Intelligence and Statistics (AISTATS), 2023, [pdf]

Minimax-Bayes Reinforcement Learning
Thomas Kleine Buening*, Christos Dimitrakakis*, Hannes Eriksson*, Divya Grover*, Emilio Jorge*
International Conference on Artificial Intelligence and Statistics (AISTATS), 2023, [pdf]

Interactive Inverse Reinforcement Learning for Cooperative Games
Thomas Kleine Buening, Anne-Marie George, Christos Dimitrakakis
International Conference on Machine Learning (ICML), 2022, [pdf]
Best Paper Award at the Cooperative AI Workshop at NeurIPS 2021

On Meritocracy in Optimal Set Selection
  Thomas Kleine Buening, Meirav Segal, Debabrota Basu, Anne-Marie George, Christos Dimitrakakis
  Equity and Access in Algorithms, Mechanisms, and Optimization (EAAMO), 2022, [pdf]
  Best Student Paper Award

Teaching Experience

University of Oslo   *Oslo, Norway*
Teaching Assistant   *Aug 2022 - Jul 2023*
• TA for "Reinforcement Learning and Decision Making under Uncertainty" (undergrad/grad)

University of Münster   *Münster, Germany*
Teaching Assistant   *Oct 2018 - Sept 2020*
• TA for "Introduction to Stochastics" (undergrad)
• TA for "Probability Theory I" (undergrad)
• TA for "Mathematical Statistics" (undergrad)

Qingdao University of Science and Technology   *Qingdao, China*
Teaching Assistant at the German-Chinese Campus   *Mar 2018 - Jul 2018*
• TA for "Ordinary Differential Equations" (undergrad)

Other Work Experience

Deloitte Consulting   *Hamburg, Germany*
Intern   *Oct 2017 - Feb 2018*
• ML and AI for business applications (forecasting, trend analysis, ...)
• Prototyping of crowd-sourcing platform

ZEB Consulting   *Münster, Germany*
Student Assistant and Intern   *Jan 2016 - Sep 2017*
• Automated data quality tests
• Model validation

Programming Skills

Python (PyTorch, NumPy, Scikit-learn), SQL

Service and Outreach

Workshop Organization   Models of Human Feedback for AI Alignment (ICML 2024), Organizer & Panel Moderator
Conference Reviewing   ICML 2022-2024, NeurIPS 2022-2024, ICLR 2023-2024, EWRL 2023-2024, AISTATS 2023

Awards

2022   **Best Paper Award with Student Presenter**, EAAMO Conference 2022   *Washington DC*
2021   **Best Paper Award**, Cooperative AI Workshop at NeurIPS 2021   *Virtual*
2019   **DAAD Scholarship**, Student Exchange Scholarship   *Canada*

Course Projects

2021   Fairness-Privacy-Utility Trade-Offs in Decision-Making
2019   Pattern Recognition with Imbalanced Data

Languages

German   Native
English   Fluent
Chinese   Conversational