Thomas Kleine Buening

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Education

University of Oslo   *Oslo, Norway*
PhD in Computer Science   *Jan 2021 - Feb 2024*
- Topics: Reinforcement Learning
- Advised by Christos Dimitrakakis
- Supported by the Norwegian Research Council
- 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 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

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

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

Publications and Preprints

Strategic Linear Contextual Bandits
  Thomas Kleine Buening, Aadirupa Saha, Christos Dimitrakakis, Haifeng Xu
  Conference on Neural Information Processing Systems (NeurIPS), 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 information technology   *Münster, Germany*
Student Assistant and Intern   *Jan 2016 - Sep 2017*
- Automated data quality tests
- Model validation

Service and Outreach

Workshops	Models of Human Feedback for AI Alignment (ICML 2024), Organizer & Moderator
Reviewing	ICML 2022-2024, NeurIPS 2022-2024, ICLR 2023-2024, EWRL 2023-2024

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	*Vancouver*

Invited Talks

2024	**Incentive-Aware Online Learning**, Sigma Lab, University of Chicago	*Chicago, USA*
2024	**Interactive Inverse Reinforcement Learning**, ML Seminar, Charles University	*Prague, Czechia*
2024	**Minimax-Bayes Reinforcement Learning**, QAVAS, University of Oxford	*Oxford, UK*

Programming

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

Languages

German (Native)   **English** (Fluent)   **Chinese** (Conversational)