Thomas Kleine Buening

7 Parks Road, Oxford, United Kingdom

 thomasklbg.github.io | Google Scholar

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 *Mar 2024 - current*
- College: 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
- Topics: Stochastic Calculus
- GPA: 94/100

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*
- Grade: 1.0 (equiv. GPA: 4.0/4.0) with Distinction
- Topics: Probability Theory, Stochastic Processes, Stochastic Calculus
- Thesis: Branching in Random Environment and Linear Fractional Distributions

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

Publications

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 Probability Theory" (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

The Garage (by Deloitte)   *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

Academic Service and Outreach

Workshop   **Models of Human Feedback for AI Alignment (ICML 2024)**, Main Organizer & Moderator
Workshop   **Beyond the Symbols vs. Signals Debate, 2024 (The Royal Society)**, Rapporteur
Reviewing   ICML 2022-2024, NeurIPS 2022-2024, ICLR 2023-2025, AISTATS 2023

Awards

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

Invited Talks

2024   **Strategic Interactive Decision-Making**, CS Department, University of Chicago   *Chicago*
2024   **Interactive Inverse Reinforcement Learning**, ML Seminar, Charles University   *Prague*
2024   **Minimax-Bayes Reinforcement Learning**, QAVAS, University of Oxford   *Oxford*

Programming

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

Languages

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