

# Thomas Kleine Buening

Banbury Road 147a, Oxford, United Kingdom

🏠 [thomasklbg.github.io](https://thomasklbg.github.io) | 🎓 Google Scholar

## Research Experience

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### The Alan Turing Institute

Postdoctoral Research Associate

- Advised by Marta Kwiatkowska and Lukasz Szpruch
- Topics: Reinforcement Learning

London, United Kingdom

Mar 2024 - current

### University of Oxford

Research Associate

- College: Trinity College (MCR)
- Topics: Reinforcement Learning

Oxford, United Kingdom

Mar 2024 - current

### University of British Columbia

Visiting Student in the Probability Group

- Hosted by Edwin Perkins
- Topics: Stochastic Calculus
- GPA: 94/100

Vancouver, Canada

Jun 2019 - Dec 2019

## Education

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### University of Oslo

PhD in Computer Science

- Topics: Machine Learning, Reinforcement Learning
- Advised by Christos Dimitrakakis
- Supported by the Norwegian Research Council
- Thesis: Learning in the Presence of Cooperative, Adversarial and Strategic Agents

Oslo, Norway

Jan 2021 - Feb 2024

### University of Münster

MSc in Mathematics

- Grade: 1.0 with Distinction
- Topics: Probability Theory, Stochastic Processes, Stochastic Calculus
- Thesis: Branching in Random Environment and Linear Fractional Distributions

Münster, Germany

Oct 2018 - Sept 2020

### University of Münster

BSc in Mathematics

- Grade: 1.9 (German grading scale)
- Minor in Computer Science
- Thesis: Optimal Stopping in Discrete Time

Münster, Germany

Oct 2014 - Sept 2017

## Publications and Preprints

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Strategyproof Reinforcement Learning from Human Feedback

**Thomas Kleine Buening**, Jiarui Gan, Debmalya Mandal, Marta Kwiatkowska  
*preprint*, 2025, [\[pdf\]](#)

A Unifying Framework for Causal Imitation Learning with Hidden Confounders

Daqian Shao, **Thomas Kleine Buening**, Marta Kwiatkowska  
*SCSL Workshop at ICLR 2025*, 2025, [\[pdf\]](#)

A Minimax Approach to Ad Hoc Teamwork

Villin Victor, **Thomas Kleine Buening**, Christos Dimitrakakis, Haifeng Xu  
*International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, 2025, [\[pdf\]](#)

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

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### University of Edinburgh

Guest Lecturer

- Exploration vs. Exploitation in Stochastic Multi-Armed Bandits (grad)

*Edinburgh, UK*

*Feb 2025 - March 2025*

### University of Oslo

Teaching Assistant

- Reinforcement Learning and Decision Making under Uncertainty (undergrad/grad)

*Oslo, Norway*

*Aug 2022 - Jul 2023*

### University of Münster

Teaching Assistant

- Introduction to Probability Theory (undergrad)
- Probability Theory I (undergrad)
- Mathematical Statistics (undergrad)

*Münster, Germany*

*Oct 2018 - Sept 2020*

### Qingdao University of Science and Technology

Tutorial Lecturer at the German-Chinese Campus

- Applied Mathematics Refresher for Engineering Students (in German) (undergrad)

*Qingdao, China*

*Mar 2018 - Jul 2018*

## Other Work Experience

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### The Garage (by Deloitte)

Intern

- Machine learning for business applications
- Prototyping of crowd-sourcing platform

*Hamburg, Germany*

*Oct 2017 - Feb 2018*

### zeb information technology

Student Assistant and Intern

- Automated data quality tests
- Model validation

*Münster, Germany*

*Jan 2016 - Sep 2017*

## Academic Service and Outreach

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- Workshop** Models of Human Feedback for AI Alignment (2nd Edition, ICML 2025), Co-Organizer  
**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-ongoing, NeurIPS 2022-ongoing, ICLR 2023-ongoing, AISTATS 2023

## Awards

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- 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**, Research Visit Scholarship *Vancouver*

## Invited Talks

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- 2025 **The Role of Incentives in AI Alignment**, ML Seminar, Czech Academy of Sciences *Prague*  
2024 **Strategic Interactive Decision-Making**, CS Department, University of Chicago *Chicago*  
2024 **Minimax-Bayes Reinforcement Learning**, QAVAS, University of Oxford *Oxford*

## Programming

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

## Languages

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