

# Thomas Kleine Buening

Banbury Road 147a, Oxford, United Kingdom

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

## Research Experience

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### The Alan Turing Institute

Postdoctoral Research Associate

London, United Kingdom

Mar 2024 - current

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

### University of Oxford

Research Associate

Oxford, United Kingdom

Mar 2024 - current

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

### University of British Columbia

Visiting Student in the Probability Group

Vancouver, Canada

Jun 2019 - Dec 2019

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

## Education

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### University of Oslo

PhD in Computer Science

Oslo, Norway

Jan 2021 - Feb 2024

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

### University of Münster

MSc in Mathematics

Münster, Germany

Oct 2018 - Sept 2020

- Grade: 1.0 (German grading scale) with Distinction
- Topics: Stochastic Processes, Stochastic Calculus
- Thesis: Branching in Random Environment and Linear Fractional Distributions

### University of Münster

BSc in Mathematics

Münster, Germany

Oct 2014 - Sept 2017

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

## Publications and Preprints

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Strategyproof Reinforcement Learning from Human Feedback

**Thomas Kleine Buening**, Jiarui Gan, Debmalaya 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, [\[pdf\]](#)

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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<b>University of Edinburgh</b> Guest Lecturer	Edinburgh, UK Feb 2025 - March 2025
<ul style="list-style-type: none"> <li>• Exploration vs. Exploitation in Stochastic Multi-Armed Bandits</li> </ul>	
<b>University of Oslo</b> Teaching Assistant	Oslo, Norway Aug 2022 - Jul 2023
<ul style="list-style-type: none"> <li>• Reinforcement Learning and Decision Making under Uncertainty</li> </ul>	
<b>University of Münster</b> Teaching Assistant	Münster, Germany Oct 2018 - Sept 2020
<ul style="list-style-type: none"> <li>• Introduction to Probability Theory</li> <li>• Probability Theory I</li> <li>• Mathematical Statistics</li> </ul>	
<b>Qingdao University of Science and Technology</b> Tutorial Lecturer at the German-Chinese Campus	Qingdao, China Mar 2018 - Jul 2018
<ul style="list-style-type: none"> <li>• Applied Mathematics Refresher for Engineering Students (in German)</li> </ul>	

## Other Work Experience

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<b>The Garage (by Deloitte)</b> Intern	Hamburg, Germany Oct 2017 - Feb 2018
<ul style="list-style-type: none"> <li>• Machine learning for business applications</li> <li>• Prototyping of crowd-sourcing platform</li> </ul>	
<b>zeb information technology</b> Student Assistant and Intern	Münster, Germany Jan 2016 - Sep 2017
<ul style="list-style-type: none"> <li>• Automated data quality tests</li> <li>• Model validation</li> </ul>	

## 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	<b>Best Paper Award with Student Presenter</b> , EAAMO 2022	Washington DC
2021	<b>Best Paper Award</b> , Cooperative AI Workshop at NeurIPS 2021	Virtual
2019	<b>DAAD Scholarship</b> , Research Visit Scholarship	Vancouver

## Invited Talks

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

## Programming

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

## Languages

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