

# JOHANNES TREUTLEIN

johannestreutlein.com ◊ jtreutlein@berkeley.edu

## EDUCATION

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- Ph.D. Computer Science** 8/2022–present  
*University of California, Berkeley*  
Temp advisor: Prof. Stuart Russell
- M.Sc. Computer Science** 1/2021–12/2022  
*University of Toronto and Vector Institute*  
Research-based master's program; supervision by Prof. Roger Grosse and Prof. Jakob Foerster; GPA: 4.0
- Visiting Student in Mathematics and Statistics** 10/2019–3/2020  
*St Catherine's College, University of Oxford*
- B.Sc. Mathematics** 10/2017–12/2020  
*Technical University of Berlin*  
Overall grade: 1.0 (on a scale of 1.0 (best) to 4.0 (worst)); this puts me in the top 2% of graduates
- B.Mus. Double bass** 10/2011–9/2015  
*State University of Music and Performing Arts Stuttgart*  
Grade: 1.0; double bass studies at a music conservatory; includes courses in musicology and music theory

## EXPERIENCE

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- Stanford Existential Risks Initiative** 6/2022–9/2022  
*ML Alignment Theory Scholar, Deceptive AI Stream* Berkeley
- Worked with mentor Evan Hubinger on AI Safety via conditioning predictive models
- Center for Human-Compatible AI, UC Berkeley** 5/2020–8/2020  
*Research Internship* Berkeley (remote)
- Worked on zero-shot coordination in multi-agent reinforcement learning; developed a mathematical theory and a new deep reinforcement learning method
  - Supervision by Prof. Jakob Foerster and Michael Dennis
- Machine Learning Group, Technical University of Berlin** 6/2019–9/2019  
*Student Assistant* Berlin
- Research on explaining the decisions of anomaly detection models using deep Taylor decomposition
- Centre for Effective Altruism** 8–9/2018  
*Summer Research Fellowship* Oxford
- Research project on the application of evidential decision theory to Bayesian bargaining games
  - Received supervision and input by researchers at the University of Oxford
- Effective Altruism Foundation (now Center on Long-Term Risk)** 9/2016–7/2019  
*Research and Outreach* Berlin
- Research on decision theory and global priorities; advised more than \$ 50,000 in grant-making
  - Conducted outreach via social media and in-person
- Munich Philharmonic Orchestra** 3/2015–8/2016  
*Orchestra academist* Munich
- Performed in concerts and TV and radio recordings with the Munich Philharmonic Orchestra

## RESEARCH

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### Publications

- Cem Anil\*, Ashwini Pokle\*, Kaiqu Liang\*, **Johannes Treutlein**, Yuhuai Wu, Shaojie Bai, J. Zico Kolter, and Roger Grosse. “Path Independent Equilibrium Models Can Better Exploit Test-Time Computation”. **NeurIPS 2022**.
- Timon Willi\*, Alistair Letcher\*, **Johannes Treutlein\***, Jakob Foerster. “COLA: Consistent Learning with Opponent-Learning Awareness”. **ICML 2022**.
- **Johannes Treutlein**, Michael Dennis, Caspar Oesterheld, and Jakob Foerster. “A New Formalism, Method and Open Issues for Zero-Shot Coordination”. **ICML 2021**.
- William MacAskill, Aron Vallinder, Caspar Oesterheld, Carl Shulman, and **Johannes Treutlein**. “The Evidentialist’s Wager”. **The Journal of Philosophy**, Volume 118, Issue 6, June 2021.

### Working papers

- Evan Hubinger, Adam Jermyn, **Johannes Treutlein**, Rubi Hudson, Kate Woolverton. “Conditioning Predictive Models: Risks and Strategies”. arXiv preprint, 2023.
- Caspar Oesterheld, **Johannes Treutlein**, Roger Grosse, Vincent Conitzer, Jakob Foerster. “Similarity-based Cooperation”. arXiv preprint, 2022.
- Julian Stastny, Maxime Riché, Alexander Lyzhov, **Johannes Treutlein**, Allan Dafoe and Jesse Clifton. “Normative disagreement as a challenge for Cooperative AI”. Accepted at the NeurIPS 2021 StratML and Cooperative AI workshops.
- **Johannes Treutlein** and Caspar Oesterheld. “A representation theorem for decision-theoretic uncertainty”. Manuscript.
- **Johannes Treutlein**. “Modeling evidential cooperation in large worlds”. Manuscript.

### Oral presentations

- “Risks from Learned Optimization in Advanced Machine Learning Systems by Hubinger et al.”. AI Safety reading group. Vector Institute for AI, 2021.
- “How the Decision Theory of Newcomblike Problems Differs Between Humans and Machines”. Decision Theory and the Future of Artificial Intelligence II. LMU Munich, 2018.
- “Global consequentialism for machines”. Utility, Progress, and Technology. 15th Conference of the International Society for Utilitarian Studies. Karlsruhe Institute of Technology, 2018.

## SERVICE

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- Served as a reviewer on the program committee for the NeurIPS Workshop on Machine Learning Safety *2022*
- Served as a mentor for the Cambridge Existential Risks Initiative (CERI) summer research fellowship, supervising a research project on evidential cooperation in large worlds *6/2022-9/2022*
- Advised on a six-figure grant by a large effective altruist philanthropic organization *6/2022*

## SCHOLARSHIPS AND PRIZES

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**Open Philanthropy AI Fellowship and Vitalik Buterin PhD Fellowship** *8/2022-7/2027*  
Fellowships for a Computer Science PhD at UC Berkeley, covering tuition and fees and a total stipend of \$55,000 per year

**Center on Long-Term Risk Fund** *1/2021-7/2022*  
A scholarship of \$144,579.10 covering living expenses and tuition to pursue a MSc in Computer Science at the University of Toronto

**Berlin Mathematical Society Bachelor Prize** *2021*  
Awarded to Mathematics graduates with outstanding academic records from universities in Berlin and Potsdam

**St Catherine’s College Book Prize** *5/2020*  
Awarded for good work in a topology tutorial at St Catherine’s College, University of Oxford

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\* Equal contribution

**Open Philanthropy***10/2019–8/2020*

A scholarship of £ 35,428 covering living expenses and tuition for undergraduate studies in mathematics, including two terms as a visiting student at St Catherine's College, University of Oxford

**Deutschlandstipendium***4/2014–3/2015*

Scholarship of € 3,600 awarded based on academic excellence to ca. 1% of German university students

**EXTRACURRICULAR ACTIVITIES**

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**Oxford University Orchestra***10–12/2019*

- Principal double bass of the Oxford University Orchestra, the university's flagship orchestra, and the Oxford University Sinfonietta, a chamber orchestra made up of the university's best instrumentalists

**Effective Altruism Munich local group***2016*

- Co-founded a local Effective Altruism chapter
- Organized and advertized talks and meet-ups (with up to 100 attendants)

**Jusos Reutlingen***2009*

- Member of the board of the Reutlingen chapter of the German Social Democrats' youth organization
- Participated in local politics and in electoral campaigns