Emanuel Tewolde

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MAIN EDUCATION

Carnegie Mellon University   Aug. 2022 – ca. Aug. 2028
PhD in Computer Science   Pittsburgh, USA

- Foundations of Cooperative AI Lab (FOCAL),   Advisor: Vincent Conitzer
- Research Focus: Algorithmic Game Theory for AI agents
- Course Focus: Algorithmic Game Theory, Reinforcement Learning

Imperial College London   Oct. 2020 – Oct. 2021
MSc in Pure Mathematics   London, United Kingdom

- GPA (UK): 83.8%,   Distinction   →   Ranked 1st out of 28 Graduates
- Focus: Geometry & Topology, Game Theory, Machine Learning

Technical University (TU) of Darmstadt   Oct. 2016 – Oct. 2019
BSc in Mathematics with a minor in Economics   Darmstadt, Germany

- GPA (Germany): 1,27   →   Top 5% of Graduates
- Focus: Mathematical Optimization

RESEARCH EXPERIENCE

- Research Assistance, On Cooperative AI, Carnegie Mellon University   Aug. 2022 – ca. Aug. 2028
- Research Visits, On Cooperative AI, University of Oxford   Summer 2022, 2023 & 2024
- Research Internship, On Deep Learning for Energy Distribution Networks, Fraunhofer Institute
  for Energy Economics and Energy System Technology (Fraunhofer IEE)   Apr. 2020 – Jul. 2020
- Research Assistance, On Machine Learning for Wind Turbine Maintenance, Fraunhofer IEE   May 2019 – Oct. 2019

PUBLICATIONS

$(\alpha\beta)$: alphabetical ordering, * : equal contribution

Highly Refereed Conference Papers

- Emanuel Tewolde, Brian Hu Zhang, Caspar Oesterheld, Manolis Zampetakis, Tuomas Sandholm, Paul W. Goldberg, and Vincent Conitzer. Imperfect-Recall Games: Equilibrium Concepts and Their Complexity. In *International Joint Conference on Artificial Intelligence (IJCAI)*, Jeju, South Korea, 2024.
- Emanuel Tewolde and Vincent Conitzer. Game Transformations That Preserve Nash Equilibria or Best-Response Sets. In *International Joint Conference on Artificial Intelligence (IJCAI)*, Jeju, South Korea, 2024.
- $(\alpha\beta)$ Vincent Conitzer, Rachel Freedman, Jobst Heitzig, Wesley H. Holliday, Bob M. Jacobs, Nathan Lambert, Milan Mossé, Eric Pacuit, Stuart Russell, Hailey Schoelkopf, Emanuel Tewolde, and William S. Zwicker. Social Choice Should Guide AI Alignment in Dealing with Diverse Human Feedback. In *International Conference on Machine Learning (ICML) – Position Paper Track*, Vienna, Austria, 2024.
- Emanuel Tewolde, Caspar Oesterheld, Vincent Conitzer, and Paul Goldberg. The Computational Complexity of Single-Player Imperfect-Recall Games. In *International Joint Conference on Artificial Intelligence (IJCAI)*, Macao, 2023.

SELECTED GRANTS

- Research Grant, Cooperative AI Foundation (CAIF), $6750   2022
- Scholarship, German Scholarship Foundation (Studienstift. des Deutschen Volkes), $\sim$22,000€   2020 – 2022
- Scholarship, Hessen-Wisconsin Exchange Program, $\sim$$10,000   2018

RELEVANT SKILLS

Software:	Python ★★★★☆, Matlab ★★☆☆☆, SQL ★★☆☆☆, Microsoft Office ★★★★☆
General Libraries:	PyTorch ★★★★☆, TensorFlow ★★★☆☆, Scikit-learn ★★★★☆
Area-Specific Libraries:	NashPy ★★★★☆, Gym ★★★☆☆, Gambit ★★☆☆☆, DGL ★★☆☆☆
Languages:	German ★★★★★, English ★★★★☆, Amharic ★★☆☆☆

TEACHING EXPERIENCE

- Instructor for new Teaching Assistants, TU of Darmstadt   2019 – 2020
    - Taught and supervised 5 – 10 new TAs per semester for the mathematics department
- Undergraduate Teaching Assistant, TU of Darmstadt   2017 – 2019
    - Introduction to Algebra, Analysis 2, Analysis 1

FURTHER HIGHER EDUCATION

- Multiple Courses of the MSc in International Economics & Economic Policy at Goethe University Frankfurt   2019 – 2020
- MSc Specialization in Mathematical Optimization at the Technical University of Darmstadt   2019 – 2020
- Exchange Semester at the University of Wisconsin-Milwaukee   2018
- Taking a Mathematics Course at Goethe University Frankfurt as a High School Student   2015

SELECTED VOLUNTEERING

- Mentoring of Incoming PhD students at Carnegie Mellon University   2023 – present
- Academic Representative for Pure Mathematics at Imperial College London   2020 – 2021
- Coordinating Outreach Events for the International Office at the TU of Darmstadt   2019 – 2020
- Hessen-Student-Ambassador in Milwaukee   2018