

# Emanuel Tewolde

✉ etewolde@andrew.cmu.edu [in LinkedIn](#) [g Google Scholar](#)

## MAIN EDUCATION

---

### Carnegie Mellon University

*PhD in Computer Science*

Aug. 2022 – present

Pittsburgh, USA

- Focus: Artificial Intelligence and Strategic Decision Making
- Advisor: Vincent Conitzer
- Part of: Foundations of Cooperative AI Lab (FOCAL)

### Imperial College London

*MSc in Pure Mathematics*

Oct. 2020 – Oct. 2021

London, United Kingdom

- GPA (UK): 83.8%, Distinction → Ranked 1st out of 28 Graduates
- Focus: Algorithms, Game Theory, Geometry & Topology, Machine Learning
- Thesis: Polynomial Time Algorithms for Nash Equilibria and Strategic Equivalence Preserving Transformations

### Technical University (TU) of Darmstadt

*BSc in Mathematics with a minor in Economics*

Oct. 2016 – Oct. 2019

Darmstadt, Germany

- GPA (Germany): 1,27 → Top 5% of Graduates
- Focus: Mathematical Optimization
- Thesis: Component-based Wind Turbine Health Monitoring using Support Vector Machines on Operational Data

## RESEARCH EXPERIENCE

---

### Carnegie Mellon University

*Research Assistance, On Artificial Intelligence and Strategic Decision Making*

Aug. 2022 – present

Pittsburgh, USA

### University of Oxford

*Research Visit, On Cooperative AI and Algorithmic Game Theory*

June 2022 – Aug. 2022

Oxford, United Kingdom

### Fraunhofer Institute for Energy Economics and Energy System Technology

*Research Internship, On Deep Learning for Energy Distribution Networks*

Apr. 2020 – Jul. 2020

Kassel, Germany

### Fraunhofer Institute for Energy Economics and Energy System Technology

*Research Assistance, On Applied Machine Learning for Wind Turbine Maintenance*

May 2019 – Oct. 2019

Kassel, Germany

## Publications

---

### Working Papers

- Emanuel Tewolde. [Game Transformations That Preserve Nash Equilibria or Best Response Sets](#). *Preprint. Under Review*.

### Highly Refereed Conference Papers

- Emanuel Tewolde, Caspar Oesterheld, Vincent Conitzer, and Paul Goldberg. The Computational Complexity of Single-Player Imperfect-Recall Games. In *Proceedings of the Thirty-Second International Joint Conference on Artificial Intelligence (IJCAI-23)*, Macao, 2023.

## TEACHING EXPERIENCE

---

### Technical University of Darmstadt

*Instructor for new Teaching Assistants*

Mar. 2019 – Sep. 2020

Darmstadt, Germany

- Taught and supervised new 5 – 10 TAs per semester for the mathematics department

### Technical University of Darmstadt

*Undergraduate Teaching Assistant*

Apr. 2019 – Sep. 2019 & Oct. 2017 – Sep. 2018

Darmstadt, Germany

- Taught exercise sessions and graded homework assignments of ~15 students per course
- Taught modules: Introduction to Algebra, Analysis 2, Analysis 1

## SELECTED GRANTS & AWARDS

---

- Research Grant: Cooperative AI Foundation (CAIF), \$6750, Aug. 2022
- Scholarship: German Scholarship Foundation (Studienstiftung des Deutschen Volkes), ~22,000, Mar. 2020 – Jul. 2022
- Department of Mathematics Prize - Best MSc Pure Mathematics Student, November 2021
- Scholarship: Hessen-Wisconsin Exchange Program, ~\$10,000, Fall Term 2018

## FURTHER HIGHER EDUCATION

---

- Some courses of the MSc in International Economics & Economic Policy at Goethe University Frankfurt, 2019 – 2022
- 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

---

- 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
- Buddy for International Students at TU of Darmstadt, 2019 – 2020
- Hessen-Student-Ambassador in Milwaukee, 2018

## RELEVANT SKILLS

---

**Programming Language / Software** : Python, Matlab , SQL , Microsoft Office

**Language** : German (native), English (fully proficient), Amharic (intermediate)