Unai Fischer Abaigar

CONTACT
INFORMATION

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EDUCATION

University of Munich (LMU), Munich, Germany
Ph.D. in Statistics   October 2022 -

- Advisors: Frauke Kreuter, Christoph Kern
- Affiliated researcher at the Munich Center for Machine Learning

Ruprecht Karl University of Heidelberg, Heidelberg, Germany
M.Sc. in Physics, German Grade: 1.0 (US GPA: 4.00)   March 2022

- Thesis: *Modeling Ordinal Mobile Data with Sequential Variational Autoencoders*
- Selected coursework: *Algorithms and Data*, *Advanced Machine Learning*, *Computational Statistics and Data Analysis*, *Chaotic, Complex and Evolving Environmental Systems*, *Machine Learning meets Graph Theory*, *Time Series Analysis and Recurrent Neural Networks*, *Theoretical Quantum Statistics*

Ruprecht Karl University of Heidelberg, Heidelberg, Germany
B.Sc. in Physics   February 2020

- Thesis: *Modeling the Evolution of Cooperation through Indirect Reciprocity*

Leibniz Kolleg, University of Tübingen, Tübingen, Germany
One year liberal arts program   July 2016

RESEARCH
EXPERIENCE

SEAS, Harvard University, Cambridge, MA, USA
Fellow   Sep 2024 - Dec 2024

- Hosted by Cynthia Dwork and Juan Carlos Perdomo at the *Harvard Center for Research on Computation and Society*
- Worked on algorithmic targeting of interventions, focusing on tradeoffs and considerations in applying machine learning to public sector resource allocations

Data Science Lab, Hertie School, Berlin, Germany
Research Associate   May 2022 - July 2022

- Hosted by Slava Jankin and Lynn Kaack
- Identified future avenues for applying machine learning methods in government and public policy

Central Institute of Mental Health, Mannheim, Germany
Research Assistant at Living Lab AI4U   Mar 2022 - Oct 2022

- Developed generative RNN models to predict emotional trajectories from mobile phone time series data in order to recommend personalized mental health interventions
- Managed technical work, coordinating with public mental health specialists, school psychologists and software developers

Research Intern   Apr 2020 - Dec 2020

- Hosted by Daniel Durstewitz at the Dept. of Theoretical Neuroscience
- Worked on sequential VAEs to uncover underlying dynamical systems of neural time series data

1

Data Lab/AI, sovanta AG, Heidelberg, Germany

Student Trainee   May 2019 - May 2020

- Worked on the development of a machine learning application used for financial resource allocation for the clinical research projects of a top pharmaceutical company

Institute of Environmental Physics, Heidelberg University, Heidelberg, Germany

Research Intern   Feb 2019 - Apr 2020

- Contributed to Utopia, a modeling framework for complex adaptive systems with a focus on network models and celluar automatons

<table>
<tr><td valign="top">HONORS AND
AWARDS</td><td>

LMU-NYU Research Cooperatoin Program   August 2025

- Funding awarded for the project *Foundations of Statistical Prediction in the Public Sphere*, supporting a research stay at NYU (~€10,000)

ICML 2025 Outstanding Paper Award   Jul 2025

- Received ICML 2025 Outstanding Paper Award for the paper *The Value of Prediction in Identifying the Worst-Off*; only six main track papers at this year's conference were chosen for this recognition

Konrad Zuse School for Excellence in Reliable AI   May 2023 -

- Selected for advanced training and funding program with the aim of training AI experts with a dual focus on technical brilliance and AI's implications for society

German Academic Scholarship Foundation (*Studienstiftung*)   Oct 2016 - Mar 2020

- Awarded to fewer than 0.5% of German students for exceptional academic abilities and societal contributions; Germany's oldest and most prestigious scholarship program

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SELECTED
PUBLICATIONS

Fischer-Abaigar, **U.**, C. Kern, and J. C. Perdomo (2025). "The Value of Prediction in Identifying the Worst-Off". In: *Proceedings of the 42nd International Conference on Machine Learning (ICML)*. **Oral Presentation @ ICML 2025**, **Highlight Track @ FORC 2025**.

Kern, C., **U. Fischer-Abaigar**, J. Schweisthal, D. Frauen, R. Ghani, S. Feuerriegel, M. van der Schaar, and F. Kreuter (2025). "Algorithms for reliable decision-making need causal reasoning". In: *Nature Computational Science*. ISSN: 2662-8457. DOI: 10.1038/s43588-025-00814-9.

Fischer-Abaigar, **U.**, C. Kern, N. Barda, and F. Kreuter (2024). "Bridging the gap: Towards an expanded toolkit for AI-driven decision-making in the public sector". In: *Government Information Quarterly* 41.4, p. 101976. ISSN: 0740-624X. DOI: https://doi.org/10.1016/j.giq.2024.101976.

Fischer-Abaigar, **U.**, C. Kern, and F. Kreuter (2024). "The Missing Link: Allocation Performance in Causal Machine Learning". In: *Workshop on Humans, Algorithmic Decision-Making and Society, ICML 2024*.

TALKS

Universal Adaptability, ITACOSM 2025, Bologna University, US	July 2025
The Value of Prediction in Identifying the Worst-Off, FORC 2025, Stanford University, US	June 2025
The Value of Prediction in Identifying the Worst-Off, Social Foundations of Computation, Max Planck Institute for Intelligent Systems, Tübingen, Germany	May 2025
Algorithmic Decision-Making in the Public Sector, Theory of Computation Graduate Student Seminar, Harvard, Cambridge, MA	Oct 2024
Introduction to Automated Decision-Making, Coleridge Initiative, UMD, Virtual	Oct 2024
Machine Learning for Reliable Decision-Making, Zuse Industry Workshop on Algorithmic Decision-Making, Virtual	Apr 2024
Challenges for ML-Supported Decision-Making, Dept. of Statistics, LMU, Munich, Germany	Jan 2024

TEACHING EXPERIENCE	**University of Munich (LMU)**, Munich, Germany

Co-Instructor

Advanced Methods in Social Statistics and Social Data Science, Graduate Course	Summer 2024, 2025
Machine Learning meets Causality, Graduate Seminar	Winter 2023

Graduate Assistant

Computational Social Science, Graduate Course	Winter 2022, 2023

Ruprecht Karl University of Heidelberg, Heidelberg, Germany

Graduate Assistant

Machine Learning for Real-World Challenges, Graduate Seminar	Summer 2022
Dynamical Systems Theory in Machine Learning, Graduate Course	Winter 2021

PROFESSIONAL ACTIVITIES

Data Science for Social Good Munich	November 2022 -

Project Management

- Co-organizer of a yearly two month paid fellowship program where aspiring data scientist work on real-world machine learning problems for the social good

DataFest Germany 2023	April 2023

Organizational Team Member

- Co-organized the sixth edition of DataFest, a data analysis hackathon

Network Particle World (*Netzwerk Teilchenwelt*)	March 2017 - July 2018

Fellow Coordinator for Heidelberg

SELECTED WORKSHOPS AND TRAINING

3rd MCML Workshop on Causal Machine Learning, Munich, Germany	Aug 2024
AI School for CS and OR Education, College Park, MD	May 2024
Multigroup Fairness and the Validity of Statistical Judgment, Simons Institute, Berkeley	April 2023
Bit from It - Information Geometry and Causality, Weimar, Germany	Sep 2019, Oct 2021
Legal and Technical Aspects of Digital Privacy, Leysin, Switzerland	August 2017