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Summary

PhD Student in Statistics at LMU Munich, Munich Machine Learning Center and Konrad Zuse School of Excellence in Reliable AI. Leveraging machine learning and causal inference to enhance the reliability of high-stakes decision-making.

Research Experience

Harvard John A. Paulson School of Engineering and Applied Sciences   *Boston, USA*

FELLOW HOSTED BY C. DWORK AND JC PERDOMO   *September 2024 - November 2024*

- Developing foundations of algorithmic targeting of interventions using ML algorithms for (public) resource allocations

Munich Machine Learning Center   *Munich, Germany*

AFFILIATED RESEARCHER   *since October 2022*

Hertie School (Data Science Lab)   *Berlin, Germany*

RESEARCH ASSOCIATE WORKING WITH PROF. S. JANKIN AND PROF. L. KAACK   *May 2022 - July 2022*

- Identified future avenues for applying machine learning methods in government and public policy

Central Institute of Mental Health   *Mannheim, Germany*

RESEARCH ASSISTANT LIVING LAB AI4U (REALLABOR AI4U)   *March 2022 - October 2022*

- Developed latent variable models based on generative recurrent neural networks using ordinal time series data collected from mobile phones in order to predict the emotional trajectories of users and suggest personalized interventions
- Managed technical work, coordinating with public mental health specialists, school psychologists and software developers

RESEARCH INTERNSHIP IN THE DEPT. OF THEORETICAL NEUROSCIENCE WORKING WITH PROF. D. DURSTEWITZ   *April 2020 - December 2020*

- Contributed to the development of recurrent neural network models trained by variational inference used for uncovering underlying dynamical systems of neural time series data

sovanta AG   *Heidelberg, Germany*

STUDENT TRAINEE IN THE SECTION DATA LAB/AI   *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, Germany*

RESEARCH INTERNSHIP IN THE GROUP "CHAOTIC, COMPLEX AND EVOLVING ENVIROMENTAL SYSTEMS" WITH PROF. K. ROTH   *February 2019 - April 2019*

- Wrote code in C++ and Python for *Utopia*, a comprehensive modeling framework for complex adaptive systems with a focus on network models
- Contributed to *dantro*, a Python package for processing hierarchically structured data

Education

PhD Student in Statistics   *Munich, Germany*

LMU MUNICH, DEPT. OF STATISTICS   *since October 2022*

- PhD Student at the *Social Data Science and AI Lab (SODA)* advised by Prof. C. Kern and Prof. F. Kreuter

Master of Science in Physics   *Heidelberg, Germany*

RUPRECHT KARLS UNIVERSITY OF HEIDELBERG   *April 2020 - March 2022*

- Final Grade Average 1.0 (on a scale of 1-5, where 1 is the best grade)
- Master Thesis (1.1) on *Modeling Ordinal Mobile Data with Sequential Variational Autoencoders* at the Dept. of Theoretical Neuroscience, ZI Mannheim

Bachelor of Science in Physics   *Heidelberg, Germany*

RUPRECHT KARLS UNIVERSITY OF HEIDELBERG   *October 2016 - February 2020*

- Final Grade Average 1.5 (on a scale of 1-5, where 1 is the best grade)
- Bachelor Thesis (1.0) on *Modeling the Evolution of Cooperation through Indirect Reciprocity* at the Institute of Enviromental Physics

Leibniz College at the University of Tübingen   *Tübingen, Germany*

ONE YEAR LIBERAL ARTS PROGRAM   *September 2015 - July 2016*

- Coursework in Computer Science, Economics, Political Science, Mathematics and Debating

Abitur (General Qualification for University Entrance)   *Freiburg i. Br., Germany*

DROSTE-HÜLSHOFF-GYMNASIUM   *September 2007 - July 2015*

- 1.0 (Valedictorian), Abitur Award of the German Physical Society

Awards and Fellowships

Konrad Zuse School for Excellence in Reliable AI   *Munich, Germany*

ASSOCIATED PHD STUDENT   *since May 2023*

- PhD 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 des Deutschen Volkes) *Germany*

SCHOLARSHIP RECIPIENT *October 2016 - March 2022*

- Received scholarship awarded to students with exceptional academic abilities who can be expected to make an outstanding contribution to society (granted to fewer than 0.5 % of German students)
- Worked on collaborative research project on information geometry and causality advised by Prof. D. Polani (September 2019 - October 2021)
- Took part in summer academy on "Legal and Technical Aspects of Digital Privacy" (August 2017)

Teaching Experience

Machine Learning meets Causality *Munich, Germany*

CO-INSTRUCTOR, GRADUATE LEVEL SEMINAR *Winter Semester 2023*

- Designed and led seminar sessions

Computational Social Science *Munich, Germany*

CO-INSTRUCTOR, GRADUATE LEVEL COURSE *Winter Semester 2022 and 2023*

- Designed worksheets and exercises; led tutorials

Machine Learning for Real World Challenges *Heidelberg, Germany*

TEACHING ASSISTANT, GRADUATE LEVEL SEMINAR *Summer Semester 2022*

- Reviewed literature; taught seminar sessions

Dynamical Systems Theory in Machine Learning and Data Science *Heidelberg, Germany*

TEACHING ASSISTANT, GRADUATE LEVEL COURSE *Winter Semester 2021*

- Designed worksheets and exercises; corrected weekly problem sets; led tutorials

Additional Projects

The AI School for Computer Science and OR Education *Washington DC, USA*

PARTICIPANT *May 2024*

- Participated in funded summer school on the intersection of OR and AI with a focus on reinforcement learning and algorithmic fairness

Data Science for Social Good Munich *Munich, Germany*

ORGANIZATIONAL TEAM MEMBER *since November 2022*

- Co-organizer of a 2-month paid fellowship program where aspiring data scientists work on real-world machine learning problems for the social good

DataFest Germany 2023 *Munich, Germany*

ORGANIZATIONAL TEAM MEMBER *April 2023*

- Co-organized the sixth edition of DataFest in Germany, a data analysis hackathon where participants tackle a previously undisclosed dataset

Network Particle World (Netzwerk Teilchenwelt) *Heidelberg, Germany*

MEMBER, FELLOW COORDINATOR FOR HEIDELBERG *March 2018 - March 2020*

- Coordinated activities for program alumni studying in Heidelberg

Interdisciplinary Forum Heidelberg (Interdisziplinäres Forum Heidelberg) *Heidelberg, Germany*

ORGANIZATIONAL TEAM MEMBER *March 2017 - July 2018*

- Helped organize interdisciplinary lecture series featuring speakers from all over Germany
- Identified and invited potential speakers, managed correspondence, designed advertising materials, introduced speakers and provided general logistical support

Skills

Languages	German (native speaker), Spanish (native speaker), English (fluent), French (basic knowledge)
Programming Languages	Python (including Pandas, PyTorch, Scikit-learn, Matplotlib), R (including Tidyverse, MCBoost), SQL, basic knowledge of C++ and Matlab.
Tools	Git, LaTeX, basic knowledge of Docker.