MARCEL KOLLOVIEH

PhD candidate at Technical University of Munich

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EDUCATION

PhD candidate in Machine Learning
Technical University of Munich

Jun 2023 – Present | Munich

- Focus: Generative models for time series, and adversarial attacks
- Supervised by Prof. Dr. Stephan Günnemann at DAML

M. Sc. Informatics
Technical University of Munich

Oct 2019 – Oct 2022 | Munich

- Passed with **high distinction**
- Thesis: Learning Hierarchies in Data by Optimizing the Expected Dasgupta Cost

B. Sc. Informatics
Technical University of Munich

Oct 2016 – Oct 2019 | Munich / Singapore

- Thesis: Implementation and Analysis of Data Compression Algorithms based on the Burrows-Wheeler Transform
- Exchange: **National University of Singapore**, Aug 2018 - Dec 2018

EXPERIENCE

Applied Scientist Intern
Amazon

Nov 2022 – Apr 2023 | Berlin

- Investigated time series forecasting using generative models
- Contributed to open-source package GluonTS
- Work published in a paper at NeurIPS 2023

Student Assistant
HelmholtzZentrum München

Sep 2020 – Aug 2021 | Munich

- Explored self-supervised learning and variational autoencoders in medical imaging
- Work led to a co-authorship of a workshop paper

Student Assistant
Technical University of Munich

Apr 2020 – Oct 2020 | Munich

- Tutor for the course Discrete Probability Theory
- Taught concepts of (discrete and continuous) probability theory, Markov chains, and statistics

Working Student Software Engineering
BSI Business Systems Integration Deutschland GmbH

Mar 2019 – Feb 2020 | Munich

- Development of Customer Relationship Management systems
- Used technologies: Java, JavaScript, and SQL

VOLUNTEERING

Tutor
TUMinternational (TUMi) / Erasmus Student Network (ESN)

Mentor
MINGA Program, TUM Department of Informatics

STRENGTHS

Python | Java | SQL | C++ | OCaml | CSS | HTML | JavaScript

PyTorch | TensorFlow | Numpy | Git | LaTeX | Slurm | AWS | Linux | OpenGL

Presentation Skills | Team Communication | Analytical Problem Solving | Time Management

LANGUAGES

English
German

SELECTED PUBLICATIONS

Journal Articles

[1] Ivan Ezhov et al. “Geometry-aware neural solver for fast Bayesian calibration of brain tumor models”. In: **IEEE Transactions on Medical Imaging** (2021).

Conference Proceedings

[2] **Marcel Kollovieh** et al. “Expected Probabilistic Hierarchies”. In: **Neural Information Processing Systems**. 2024.

[3] **Marcel Kollovieh** et al. “Assessing Robustness via Score-Based Adversarial Image Generation”. In: **arXiv preprint arXiv:2310.04285**. 2023.

[4] **Marcel Kollovieh*** et al. “Predict, Refine, Synthesize: Self-Guiding Diffusion Models for Probabilistic Time Series Forecasting”. In: **Neural Information Processing Systems**. 2023.

[5] Jan Kukačka et al. “Self-Supervised Learning from Unlabeled Fundus Photographs Improves Segmentation of the Retina”. In: **Medical Imaging meets NeurIPS**. 2021.