Ziqing Zhao

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Education

Technical University of Munich (TUM), Germany **04/2024 – Present**
M.Sc. in Mathematics; ***Grade: 2.1 (good)*** *Core-modules: Biomathematics and Biostatistics*

Technical University of Munich (TUM), Germany **11/2020 – 10/2023**
M.Sc. in Electrical and Computer Engineering; ***Grade: 1.3 (very good)*** *Core-modules: Automation and Robotics*

Beijing Institute of Technology (BIT), China **09/2016 – 07/2020**
B.Eng. in Electronic Information Engineering; ***Grade: 90/100*** *Core-modules: Communication Engineering*

Organizations & Scholarships

Konrad Zuse School of Excellence in Reliable AI (relAI) **10/2024 - Present**
M.Sc Student Fellow in Mathematical Foundations ***Mentor****: Prof. Dr. Mathias Drton*

Research & Teaching Experience

Student Assistant in Computational Biology **10/2025 – Present**
Helmholtz Munich & University Clinic Munich, LMU ***Supervisor****: Dr. Hannah Spitzer*

- Build deep learning pipeline for predicting cell types and healthy/pathological states from DAPI-stained images.

Master's Thesis in Biomathematics **10/2025 – Present**
Helmholtz Munich & Technical University of Munich ***Supervisor****: Dr. Vincent Fortuin*

- Extend a prior-fitted network framework with Riemannian Neural Processes to support Riemannian predictives, quantify the sim2real gap, and validate predictive performance on real-world datasets.

Teaching Assistant in Statistics **04/2025 – 07/2025**
Technical University of Munich *Department Mathematical Statistics*

- *Introduction to Data Science and Statistical Thinking*: Guided bachelor students in basic probability and statistical principles and data exploration in R.

Data Innovation Lab **10/2024 – 02/2025**
Munich Data Science Institute (MDSI) & Helmholtz Munich ***Supervisor****: Prof. Dr. Massimo Fornasier*

- Developed graph- and sequence-based deep learning models for predicting RNA-small molecule interactions for RNA-targeted drug discovery.

Working Student & Master's Thesis in Robotics **04/2022 – 10/2023**
Machine Learning Research Lab, Volkswagen, Munich ***Supervisor****: Prof. Dr. Patrick van der Smagt*

- Integrated model-based reinforcement learning and spatial world model to optimize spatial navigation for QCar.
- Developed an information-theoretic framework for spatial exploration in a deep variational Bayesian state-space model, controlling robot car for real-time navigation in dense 3D environments.

Research Intern **04/2021 – 10/2021**
fortiss GmbH, Munich, Germany ***Supervisor****: PD Dr. Hao Shen*

- Implemented a sampling-free Laplace Approximation for Bayesian Neural Network [GitHub] and evaluated the performance of diagonal Hessian approximation for object detection in autonomous driving scenarios.

Research Topics

Bayesian Networks, Neural Processes, Causal Inference, Graphical Models, Computational Statistics

Publications

Ziqing Zhao, Ming Gui, Tianming Qiu, and Hao Shen. Laplace approximation with diagonalized hessian for over-parameterized neural networks. In *Bayesian Deep Learning NeurIPS workshop*, 2021 [link]

Skills

Programming: Python, R, MATLAB, C, C++, JAX, PyTorch, OpenAI Gym, Git, Docker

Languages: Chinese (Native), English (Professional), German (Elementary)