

EDUCATION

Doctoral Candidate / Ph.D Jul 2022 - Present

School of Computation, Information and Technology, Technical University of Munich (TUM)

Research interests: probabilistic generative models, Bayesian inference, and wireless channel modeling

Master of Science Oct 2019 - Apr 2022

Electrical Engineering and Information Technology, Technical University of Munich (TUM)

Grade: 1.0 (best possible in German system; 4.0/4.0 US GPA)

Bachelor of Science Oct 2016 - Apr 2020

Physics, Ludwig Maximilian University of Munich (LMU)

Grade: 2.0 (German system; \approx 3.3/4.0 US GPA)*Pursued as a separate degree and in parallel with B.Sc. in Electrical Eng. and Inf. Technology at TUM***Bachelor of Science** Oct 2015 - Apr 2019

Electrical Engineering and Information Technology, Technical University of Munich (TUM)

Grade: 1.4 (German system; \approx 3.7/4.0 US GPA)

SELECTED PUBLICATIONS

- **B. Böck**, S. Syed, W. Utschick, “*Sparse Bayesian Generative Modeling for Compressive Sensing*,” **NeurIPS**, 2024. [\[Link\]](#), [\[Code\]](#)
- **B. Böck**, A. Oeldemann, T. Mayer, F. Rossetto, W. Utschick, “*Physics-Informed Generative Modeling of Wireless Channels*,” **ICML**, 2025. [\[Link\]](#), [\[Code\]](#)
- **B. Böck**, D. Semmler, B. Fesl, M. Baur, W. Utschick, “*Gohberg-Semencul Toeplitz Covariance Estimation via Autoregressive Parameters*,” **IEEE Transactions on Signal Processing (TSP)**, 2025. [\[Link\]](#), [\[Code\]](#)
- **B. Böck**, M. Baur, N. Turan, D. Semmler, W. Utschick, “*A Statistical Characterization of Wireless Channels Conditioned on Side Information*,” **IEEE Wireless Communications Letters (WCL)**, 2024. [\[Link\]](#)

Further publications in IEEE journals, IEEE conferences, and ML conferences; full list on [Google Scholar](#).

INDUSTRIAL EXPERIENCE / RESEARCH PROJECTS

Research Collaboration with Rohde & Schwarz May 2023 - May 2025

- Conducted research in collaboration with Rohde & Schwarz, with two years of dedicated funding support.
- Developed a probabilistic and physics-informed generative model for wireless channels, resulting in a pending patent and publications at *NeurIPS*, *ICML*, and *IEEE WCL*.

Research Project with Infineon Technologies Sept 2018 - Feb 2019

- Reduced substrate noise in mixed-signal integrated circuits by developing clock skew optimization methods.

Engineering Intern at fos4x GmbH Sep 2017 - Nov 2017

- Characterized and designed fiber-optical Fabry-Pérot acceleration sensors.

SKILLS

- *Languages*: English (Fluent), German (Native)
- *Programming*: Python, Matlab, C++, C; Git, Linux, \LaTeX
- *ML Frameworks*: PyTorch, scikit-learn, NumPy, SciPy, Pandas, Matplotlib

TEACHING

2022–Present Co-Instructor for the Master’s course *Convex Optimization* (TUM, yearly Winter term)2020–2021 Teaching Assistant for courses on *Machine Learning* and *Quantum Networks* (TUM)2017–2018 Student Assistant for courses on *Electricity*, *Data Structures*, and *Computer Technology* (TUM)

AWARDS

- Co-recipient of the Best Paper Award for “*Wireless Channel Prediction via Gaussian Mixture Models*”, International ITG/IEEE Workshop on Smart Antennas (WSA), 2024