David B. Hoffmann

Education

Master of Science | ***Data Science*** | GPA: 1.0 (Top of Class) — Oct 2024 – Aug 2026
Ludwig Maximilian University — Munich, Germany
- Relevant Coursework: Advanced Statistical Modelling and Programming, Supervised Learning, Human Computation and Analytics, Statistical Reasoning and Inference, Connecting Language to Vision

Bachelor of Science | ***Information Systems - Data Science*** | GPA 1.2 — Oct 2021 – Sep 2024
Baden-Wuerttemberg Cooperative State University — Mannheim, Germany
- Relevant Coursework: Reinforcement Learning, Social Network Analysis, Advanced Aspects of Artificial Intelligence, Applied Optimization Techniques, Big Data Programming
- Bachelor Thesis: *A Graph Theoretical Approach to Pruning Deep Neural Networks* (supervised by Sarah Detzler)

Exchange Term | ***Computer Science*** | GPA 1.0 — Sep 2023 – Dec 2023
University College Cork — Cork, Ireland
- Relevant Coursework: Network Science, Theory of Computation, Computational Machine Learning

Work Experience

Research Assistant — Apr 2025 – Present
Ludwig Maximilian University, Database Systems and Data Mining Group — Munich, Germany
- Analyzed failure points in deep and classical clustering methods using multidimensional evaluation (manuscript under review, with Walid Durani and others)
- Developing a procedural benchmark for vision-based agentic systems (ongoing, supervised by Tanveer Hannan and Jindong Gu)

Applied Science Intern — Jan 2024 – May 2024
Amazon Web Services, LLM Lab — Tübingen, Germany
- Researched scalable foundation models using efficient graph-based pruning techniques (Bachelor Thesis, with Kailash Budhathoki and Matthaeus Kleindessner)
- The devolved method had on average 13.42 % higher accuracy for the same sparsity ratio compared to two popular baselines leading to state-of-the art structured pruning performance

Applied Science Intern — Feb 2023 – Aug 2023
Amazon Web Services, SageMaker — Berlin, Germany
- Researched the integration of advanced forecast ensemble techniques with hyperparameter optimisation in an end-to-end AutoML pipeline (supervised by Meng Li and Valerio Perrone)
- Outperformed Amazon Forecast, with a 3.5 % lower error and 16.0 % lower end-to-end ensemble latency

Projects and Research

PagePal: A Gamified Paper Reading Assistant | Human Computation and Visualization Project — 2025
Ludwig Maximilian University

LLM-Rank: A Graph Theoretical Approach to Pruning Deep Neural Networks — 2024
Research at Amazon Web Services

Autoencoder-Based General-Purpose Representation Learning for Entity Embedding — 2024
Research at Amazon Web Services

Impact of Hyperparameter Optimization on Advanced Forecasting Ensembles — 2023
Research at Amazon Web Services

Other

Skills: Python (PyTorch, Pandas, NetworkX, SciPy, Sklearn, Gymnasium), Inference Optimisation, Pruning, Hyperparameter Optimisation, Graph Theory, Forecasting
Interests: Exploring the world, Hiking, Psychology, River Surfing, Brazilian Jiu-Jitsu , Carpentry
Volunteering: Currently training with the Red Cross to become a paramedic
Languages: English (C2), French (A2), German (Native)