

Lukas Voss

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EDUCATION (GPA out of 4.0)

- 10/23 – **Centre for Quantum Technologies, Yale-NUS College, National University of Singapore** – Master Thesis Project
09/24
 - Quantum Optimal Control with Reinforcement Learning (Supervised by: Hui Khoon Ng & Martin Plenio)
- 09/22 – **National Taiwan University, Taipei, ROC** – MSc Physics (GPA: 4.0) – Academic exchange for two semesters
06/23
 - Focus on quantum computing, high-performance computing, and Chinese language classes
 - AI-Project for HPC class: Study speedup of parallelized Deep Learning Training using a single NVIDIA GPU
- 04/21 – **Ulm University, Ulm, Germany** – MSc Physics and Management & MSc Physics (Double Degree, current GPA: 3.8)
09/24
 - Specializations (current GPA): Econophysics (4.0), Finance (4.0) and Business Analytics (3.3)
 - Scientific poster contribution at 84th Condensed Matter Conference of German Physical Society (09/21)
- 10/17 – **Ulm University, Ulm, Germany** – BSc Physics and Management (GPA: 3.0)
03/21
 - Specialization: Technology and Process Management – IT Project Management & CRM (GPA: 3.9)
 - Thesis: “Exact stochastic correction of mean field theory with application to diamond-based spin systems” (Monte Carlo simulations in Matlab) – Institute for Complex Quantum Systems (GPA: 3.7)
- 09/09 – **Hohenlohe Gymnasium Öhringen, Öhringen, Germany** – University Entrance Qualification (Abitur) – (GPA: 3.0)
07/17
 - Core subjects: German, Mathematics, English, Physics and Economics
 - Exchange programs: New Delhi, India (10-11/13); Avignon, France (04/13)

PROFESSIONAL EXPERIENCE

- 07/23 – **Fraunhofer Institut für Produktionstechnik und Automatisierung, Stuttgart, Germany** – Student Researcher
09/23
 - Deployment of a simulation pipeline on a computational cluster for Quantum ML applications (Python)
- 06/22 – **BlackRock – Portfolio Analytics Group (PAG), Budapest, Hungary** – Summer Analyst
08/22
 - Multi-Asset Multi-Factor Validation Framework (w/ San Francisco, New York, London & Hong Kong office)
 - Development of an automatized testing framework analyzing the accuracy of a new financial model
 - Reduction of data query time by ca. 60% using API calls (Python, SQL, MS PowerBI)
- 10/21 – **KPMG AG Wirtschaftsprüfungsgesellschaft – Financial Risk & Treasury, Munich, Germany** – Intern
12/21
 - Development of an interactive treasury dashboard with automatized real-time market data analysis (Python)
 - Pitched my project results to the German Treasury practice (>60 FTE including partners) & demo to 2 clients
- 04/20 – **Ulm University – Institute for Business Analytics** – Student Research Assistant
03/22
 - Responsible for the large-scale IT infrastructure (19 agencies) of the state-wide project DIGIPEG – Data Analysis of online messenger client (Python); Assistant lecturer for Data Science with Python (Prof. Klier)

PROGRAMMING & ML EXPERIENCE

- 01/24 – **Low-Weight LDPC Quantum Error Correction (QEC) Codes** – Ongoing Research Project (Python) – GitHub
today
 - Objective: Identifying more resource-efficient QEC codes compared to current state-of-the-art surface codes
 - Building custom programming pipeline (OOP): Parameter space search >> Distance calculation >> Decoding
 - Self-Initiated Collaboration with Kishor Bharti (A*STAR Singapore) & Tobias Haug (TII Abu Dhabi)
- 10/23 – **Context-Aware Gate Calibration with Reinforcement Learning** – Ongoing Research Project (Python) – GitHub
09/24
 - Agent interacts with a quantum computer as its environment to find ideal parameters for a target operation
 - Using Proximal Policy Optimization (PPO) + HPO for more robust learning (PyTorch, Optuna, Gym – OOP)

LEADERSHIP EXPERIENCE & AWARDS

- 12/23 – **Singapore Quantum Tech Meetup Group** – Co-Organizer of events
today
 - Organizing regular in-person sessions for quantum enthusiasts hosting speakers from industry & academia
 - Selected events: Qibo (01/24), Quantum Machines (02/24), MajuLab (04/24); TBA: Alice & Bob (05/24)
- 06/16 **2nd best team nationwide German Entrepreneur Prize for Students, Gruner+Jahr (now RTL), Hamburg, Germany**
 - Awarded for outstanding performance with team *Shrave*; An initiative of Porsche, ZDF, STERN and Sparkasse

SKILLS & INTERESTS

- Engagement Alumni Organization for the Top 30 of the German Entrepreneur Prize for Students competition – President since 08/21
 - Leading a team of four, overseeing the budget, planning networking and career development events
 - Organized the 10-year jubilee event at RTL with 3 C-Level executive guest speakers of German firms (07/23)
- Languages German (native), English (full working proficiency), Mandarin Chinese (est. HSK 4), French (est. B1)
- Technology Experienced in Python, R (Data Analytics), Matlab (Simulations), Git, Excel (+VBA), LaTeX. Basic knowledge in SQL
- Interests Quantum Technology, Financial Markets, Swimming, Passionate about cooking and learning languages