DANIEL BARTA

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PROFILE

M.Sc. Electrical & Information engineer with 3+ years of hands-on experience in machine learning and generative AI methods, and 1+ year in quantum computing. Experienced in software development and neuro-symbolic reasoning.

CORE COMPETENCIES

Quantum Computing | Machine Learning | Optimization | Communication Systems

EDUCATION

Technical University Berlin Sep 2022 – Aug 2025
M.Sc. in Electrical and Information Engineering

- Thesis: "One-Bit Channel Estimation with Generative Adversarial Networks."

Technical University Munich Oct 2017 – Aug 2022
B.Sc. in Electrical and Information Engineering

- Completed advanced coursework in quantum computing, machine learning, optimization, signal processing, and communication theory.

PUBLICATIONS

Conference Papers

- **"Leveraging Diffusion Models for Parameterized Quantum Circuit Generation"**, accepted at **IEEE QCE '25**. [arXiv:2505.20863]
- **"Surrogate Benchmark for Quantum Architecture Search"**, under review. [arXiv:2506.06762] [GitHub Repo.]

Journal & Book Chapters

- **"Legally-Guided Automated Decision-Making System Using Language Model Agents for Autonomous Driving"**, in *Lecture Notes in Computer Science* (Springer), 2025. [DOI:10.1007/978-3-031-72407-7_17]

PROFESSIONAL EXPERIENCE

Working Student – Quantum Computing & AI Mar 2023 – Present
Fraunhofer FOKUS, Berlin

- Utilized generative models that improved state preparation and optimized quantum ML workflows.
- Accelerated quantum benchmark runs with surrogate models..
- Built neuro-symbolic reasoning modules for legally compliant autonomous driving.
- Engineered backend and frontend pipelines with the Karma framework for efficient JSON-to-RDF mapping.
- Optimized federated database queries to deliver real-time structured outputs across multiple systems.

Intern – Engine and Data Analytics Mar 2022 – Aug 2022
BMW Group, Munich

- Enhanced automated model verification pipelines, reducing testing time and improving accuracy.
- Optimized database schemas for faster retrieval, improving analytics efficiency.
- Analyzed driving-behavior datasets using Python and MATLAB with advanced game-theoretic models.

OTHER EXPERIENCE

Student Assistant – IT & EDV Support Apr 2019 – Apr 2022
Ludwig-Maximilians-University Munich

- Maintained and supported IT systems for a large academic department, resolving issues swiftly to ensure operational continuity.

Project Manager Mar 2016 – Jan 2019
PA/SPIELkultur e.V., Munich

- Planned and organized conventions, workshops and cultural events for up to 100 attendees, from initial concept through on-site execution.
- Coordinated all logistics—venue booking, floor plans, technical and AV requirements—to ensure seamless event flow.

SKILLS

Languages & Frameworks: Python | PyTorch | Qiskit | PennyLane | TensorFlow | MATLAB/Simulink | Java | C++
Tools & Platforms: Git | Docker | Linux | Federated Systems

LANGUAGES

German	Native (C2)	**Romanian**	Limited working proficiency (B1)
English	Full professional proficiency (C1)	**Italian**	Basic proficiency (A2)