JUSTIN PAUCKERT

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SUMMARY

Software developer with 6+ years of experience and a strong background in mathematics. Areas of expertise include data science, quantum computing and optimization.

SKILLS

Python: numpy, pandas, matplotlib — SQL — Docker — AWS — Linux — Git — CI/CD (Jenkins) — Agile (Scrum)

EXPERIENCE

Quantum Engineer Since Apr 2023
T-Systems (Deutsche Telekom), Office of the CTO *Berlin, Germany*

- Implemented quantum-inspired solvers in Python for real-world applications with focus on optimization
- Collaborated with cross-functional teams to integrate quantum computing into existing cloud infrastructure
- Delivered keynotes and conducted workshops about QC in both internal and external settings

Research Intern: Quantum-Inspired Optimization Jan 2022 - Mar 2023
Fujitsu Ltd. Japan | Fujitsu Research Europe *Tokyo, Japan | London, UK*

- Automated parameter tuning for a quantum-inspired solver, written from scratch in Python
- Outperformed previous state-of-the-art method, finding optimal solutions up to 9x faster
- Introduced automatic sampling, making problems up to 5x faster to encode and 16 % easier to solve

Data Warehouse Developer Jan 2020 - Dec 2021
BIOTRONIK *Berlin, Germany*

- Developed a COVID-19 fever alert for patients using Python and SQL, automating reports for US doctors
- Designed Couchbase to Oracle data import, exception handling and logging via SQL procedures
- Containerized and deployed multiple projects using Docker, ensuring data security with pytest

EDUCATION

Master of Science: Mathematics, Technical University of Berlin 2020 - 2024
Relevant Courses: Industrial Data Science, Combinatorial Optimization, Monte Carlo Methods

Bachelor of Science: Mathematics, Technical University of Berlin 2015 - 2020
Relevant Courses: Probability Theory, Cognitive Algorithms, Models of Neural Systems

PUBLICATIONS AND CERTIFICATES

Pauckert, Justin et al. *"AutoQUBO v2: Towards Efficient and Effective QUBO Formulations for Ising Machines."* Proceedings of the Companion Conference on Genetic and Evolutionary Computation. Association for Computing Machinery, 2023. • https://doi.org/10.1145/3583133.3590662

Pauckert, Justin et al. *"Comparing Solution Combination Techniques in Scatter Search for Quadratic Unconstrained Binary Optimization."* Proceedings of the Companion Conference on Genetic and Evolutionary Computation. Association for Computing Machinery, 2023. • https://doi.org/10.1145/3583133.3596319

Qiskit Certificate of Quantum Excellence, 2023 Qiskit Global Summer School

Test of English as a Foreign Language (TOEFL), score: 111/120

AutoQUBO, Tool for converting a high-level Python description of an optimization problem into an equivalent QUBO representation. • github.com/FujitsuResearch/autoqubo

Stein Variational Gradient Descend, Presentation on a bayesian inference algorithm including animations made with matplotlib. • github.com/lpodl/Stein-Variational-Gradient-Descend • youtu.be/znVcfdVILs0