Daniel G. Alfert

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Profile

Quantitative and data-focused graduate with a strong mathematical foundation, research experience in computational modeling, and hands-on backend engineering experience. Background spans statistics, time series analysis, and applied Python, with proven ability to transform requirements into working systems.

Education

MSc in Quantum Information Science Sep 2023 - Jan 2026
University of Copenhagen

- Thesis: *Learning Local Gibbs States from Noisy Shallow Quantum Circuits*
- Simulated noisy quantum circuits using tensor networks (Python, Quimb); studied depolarizing and amplitude damping noise under k-local, shallow-circuit assumptions
- Coursework: Introduction to Quantum Computing (12/12), Quantum Information Theory (12/12), Analysis in QIT (10/12), Quantum Error Correction (10/12), Advanced Algorithms and Data Structures (12/12), Time Series Analysis (10/12), Quantum Algorithms & Machine Learning (12/12)

BSc in Mathematics and BSc in Computer Science (concurrent) Sep 2017 - Jul 2023
University of Granada

- Thesis: *Fundamentals of Quantum Computing*; simulations of basic quantum algorithms using Qiskit
- Coursework: Stochastic Processes, Statistical Inference, Linear Algebra (6 courses)

Technical Skills

Programming	Python (NumPy, Pandas, scikit-learn, Quimb, Qiskit), C++ (STL, algorithmic problem solving), JavaScript (Vue.js, React), Dart (Flutter)
Statistics / Data	Time series (AR, MA, ARIMA, ARIMAX), linear & logistic regression (L1/L2), Gaussian Mixture Models, hypothesis testing
Systems	Linux, Git, GitHub Actions, Docker, Nginx, systemd, CI/CD
Databases	PostgreSQL, MariaDB, SQLite; raw SQL and ORMs
Languages	English (fluent), Spanish (native)

Experience

Software Engineer (Student) Jun 2024 - Aug 2025
Novo Nordisk Foundation - Quantum Computing Programme (NQCP)

- Built a greenfield internal knowledge platform for 50 researchers in a 2-person team, owning **80% of the codebase** from requirements gathering through deployment
- Translated loosely defined stakeholder needs into a structured product: scoped features, designed the data model (15 relational tables), and delivered a working prototype on schedule
- Implemented backend (FastAPI) and frontend (Vue.js), including authentication, async APIs, and deployment on internal infrastructure

Applied AI Intern Oct 2022 - Mar 2023
Avanade

- Completed an end-to-end computer vision deployment: trained a classification model, deployed to edge devices via Azure ML, and navigated production constraints
- Gained exposure to cloud-based ML workflows and cross-team delivery in a large consulting environment

AI-Powered Staffing Application Apr 2025
Independent Project

- Built an end-to-end tool that ingests CVs, embeds them into a vector store, and matches consultants to projects using natural language descriptions
- Designed a dual-store architecture (SQL + ChromaDB) and a multi-stage matching pipeline with weighted scoring across fit, availability, seniority, and team diversity

Computational Data Science Projects May 2025
MSc Coursework

- **Regression & Model Selection:** Implemented regularized regression models (L1/L2), performed hyperparameter tuning via grid search, and evaluated model performance under different regimes
- **Signal Analysis:** Applied Gaussian Mixture Models to relate physiological signals to emotional states using unsupervised clustering and probabilistic interpretation

Master's Thesis - Research Experience 2025

- Designed and executed a computational research project: formulated hypotheses, ran large-scale simulations, and systematically analysed results
- Implemented tensor-network simulations in Python (Quimb) and formulated an original conjecture from computational findings