DANIEL G. ALFERT

Graduate (Computer Science & Mathematics, Quantum Information)

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Profile

Quantitative and technically versatile professional with a background in Computer Science, Mathematics, and advanced modelling. I work comfortably across software engineering, data science, and quantitative analysis, with a strong focus on building reliable systems, extracting insight from data, and communicating complex ideas clearly.

My experience spans Python-based backend development, statistical modelling, cloud infrastructure, CI/CD pipelines, data analysis, and work in regulated environments. I am motivated by intellectually demanding problems and enjoy operating at the interface between theory, engineering, and real-world decision-making.

Experience

Software Engineer (Part-time) Jul 2024 – Aug 2025
Novo Nordisk Foundation Quantum Computing Programme (NQCP)

- Designed and implemented Python-based analytical and backend tools supporting data-intensive research workflows.
- Developed a centralized knowledge management platform used across multiple teams.
- Built reproducible workflows with strong emphasis on documentation, maintainability, and handover between teams.
- Collaborated with researchers, engineers, and non-technical stakeholders to translate complex requirements into robust technical solutions.

Software Engineering Intern Oct 2022 – Mar 2023
Avanade

- Worked on cloud-based analytics and machine learning projects using Python and SQL.
- Deployed and supported data-driven systems in regulated, production-oriented environments.
- Used Azure services, Databricks, and CI/CD pipelines to support scalable solutions.
- Collaborated in multidisciplinary teams with strict delivery and documentation standards.

Research & Projects

Statistical Modelling of Complex Systems
Master Thesis University of Copenhagen

- Developed statistical and numerical models to approximate and analyse noisy systems.
- Applied Monte Carlo simulation, hypothesis testing, sensitivity analysis, and validation.
- Built Python pipelines using NumPy, Pandas, SciPy, and tensor-network tools.
- Emphasised reproducibility, traceability, and interpretability of results.

Data Analysis & Automation Projects

Academic and Personal

- Performed exploratory data analysis on structured datasets to identify patterns and anomalies.
- Built automation scripts and analytical tooling for data transformation and reporting.
- Integrated data from APIs and internal services into reproducible workflows.

Education

MSc in Quantum Information Science 2023 – 2025
University of Copenhagen

- Focus areas: statistics, modelling, numerical methods, scientific computing, machine learning concepts.
- Thesis centred on statistical approximation and model validation.

Double BSc in Computer Science & Mathematics 2017 – 2023
University of Granada

- Coursework in algorithms, probability, statistics, linear algebra, optimisation, and software engineering.

Technical Skills

Programming Languages
Python, SQL, JavaScript, C++, Java, Ruby, PHP; familiarity with Rust concepts.

Data Science & Analytics
Pandas, NumPy, SciPy, Scikit-learn, Jupyter, Matplotlib; exploratory analysis, feature engineering, model validation, statistical reasoning.

Quantitative & Mathematical
Statistical modelling, Monte Carlo simulation, hypothesis testing, sensitivity analysis, numerical methods, optimisation concepts.

Software Engineering
Backend development, modular design, clean architecture, documentation, testing principles, code reviews.

Cloud & Infrastructure
Azure, Databricks, CI/CD pipelines, Git, containerisation concepts, deployment workflows.

Data Engineering
Structured data processing, ETL-style workflows, SQL transformations, API integration, reproducible pipelines.

Professional Strengths

Structured problem-solving, attention to detail, ownership mindset, clear written and verbal communication, cross-functional collaboration, ability to learn new domains quickly, comfort working under ambiguity.

Languages

- English: Fluent
- Spanish: Native