

# Daniel Skerman

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## SUMMARY

Data professional with 5 years of experience in the financial sector and completing an MSc in Mathematics (expected September 2026). Alongside postgraduate studies, I currently work as a Data Engineer, collaborating with non-technical stakeholders to automate financial reporting and analytics workflows. Seeking a mathematically rigorous role in software engineering, quantitative finance, or data science to leverage a strong foundation in applied mathematics and production-level software development.

## EXPERIENCE

### Legal & General (Asset Management)

Sep. 2023 – Present

#### Finance Data Engineer

Cardiff, UK

- Engineered and maintained financial data pipelines, maintaining order under high-pressure conditions to investigate and resolve **multi-million-pound financial discrepancies** reported by fund managers and accountants.
- Partnered with Business Solutions Analysts to develop new data pipelines, most notably refactoring the Private Markets/Real Assets workflow from a legacy Alteryx process into a scalable **C# and SQL Server** solution.
- Assumed ownership of the critical **ESG data pipeline** during a high-pressure transition, rapidly resolving discrepancies to satisfy strict audit requirements, and independently executing a full architectural rebuild.
- Rebuilt the internal task tracking backend to capture useful metrics, built a dashboard to present these KPIs
- Directed the onboarding and mentorship of new engineering team members, enforcing **strict coding standards** to improve codebase readability and significantly reduce friction in cross-team collaboration.

### Admiral Group

Jul. 2021 – Sep. 2023

#### Fraud Data Analyst

Cardiff, UK

- Engineered and validated SQL-based fraud detection rules, designing **Looker dashboards** to present analytical findings for non-technical stakeholders prior to production deployment.
- Took a leading role on the migration of legacy fraud detection pipelines from SAS DI to a cloud-based architecture on **Google Cloud Platform (GCP)**, developing a standardised templating script that accelerated the refactoring of our fraud detection solution.
- Partnered with the data science team to deploy a fraud prediction machine learning model, directly contributing to the **identification and recovery of over £500,000** in fraudulent claims over a 6-month period.
- Developed performance monitoring dashboards for the ML model, establishing a framework to facilitate **model evaluation and retraining**.

## EDUCATION

### Cardiff University / Prifysgol Caerdydd

Sep. 2025 – Sep. 2026

#### Master of Science in Mathematics – Expected Distinction

Cardiff, UK

- Dissertation:** Applications of the Direct Method of the Calculus of Variations — *Utilising the Direct Method to analyse and solve optimisation problems in financial and applied mathematics.*
- Selected Modules:** Calculus of Variations (**88%**), Stochastic Search and Optimisation (**81%**), Reading Module: *C\*-algebras* (**76%**), Financial Mathematics and Modern Actuarial Risk Theory (**70%**).

### Aberystwyth University / Prifysgol Aberystwyth

Sep. 2018 – Jun. 2021

#### Bachelor of Science in Mathematics – First Class Honours

Aberystwyth, UK

- Selected Modules:** Linear Statistical Models (**92%**), Introduction to Numerical Analysis and its Applications (**88%**), Hydrodynamics II (**83%**), Partial Differential Equations (**77%**), Numerical Solution of PDEs (**76%**).

## PROJECTS

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### Student Loan Calculator

2026

*Financial Mathematics Application*

[Live Site](#) | [GitHub](#)

- Derived analytical mathematical formulas for UK student loan repayments, prototyping the logic in Excel before developing a **Python numerical solver** to simulate repayment trajectories.
- Architected a scalable backend using **FastAPI**, decoupling the England and Wales repayment logic into a structured **JSON** file. This will allow seamless integration of future international loan schemes.
- Designed and implemented **interactive data visualisations** to illustrate the financial impact of monthly overpayments, enabling users to calculate potential interest savings and optimise their repayment strategies.
- Leveraged **AI-assisted workflows** to accelerate frontend development, seamlessly integrating the computational Python backend with a responsive, user-friendly interface.

### Aerofoil Numerical Simulation

2026

*Computational Research Project*

[GitHub](#)

- Brought on as a fluid dynamicist to support a Robotics PhD researcher's biomimetic study, developing the framework to simulate pressure sensor data collection for bio-inspired robotic designs, with findings slated for an **upcoming academic publication**.
- Engineered a **Python-based numerical simulation** to model unsteady fluid dynamics, calculating pressure distributions along an aerofoil traversing a humped boundary.
- Used **Jupyter Notebooks** to create reproducible, well-documented computational workflows, and utilised **Data Wrangler** to perform analysis of simulation outputs.
- Architected a **modular backend library** for the numerical solvers, separating complex mathematical logic from the analysis workflows to ensure code reusability and maintainability.

### PosterToPlaylist

2025

*Full-Stack AI Application*

[Live Site](#) | [GitHub](#)

- Built as a foundational full-stack project that significantly accelerated my **technical growth**; the live deployment is currently **paused** during my MSc studies while the application undergoes a rebuild.
- Developed as a **Streamlit** application. This used API integrations across **Google**, **OpenAI**, and **Spotify** to dynamically generate spotify playlists from festival poster images.
- Applied advanced **prompt engineering** with **ChatGPT** to take unstructured image data, extracting artist lineups into **Pandas** DataFrames. This was used for playlist creation via the Spotify API.
- Architected a cost-efficient data layer by self-hosting a **PostgreSQL** database on a **Raspberry Pi**, significantly reducing cloud infrastructure costs.
- Implemented **logging** to monitor user interactions and automated disaster recovery via scheduled backups to external cloud storage.
- Managed the end-to-end product lifecycle, including **SEO optimisation** and digital **monetisation**.

### Personal Portfolio Website

2025

*Architecture & DevOps*

[Live Site](#) | [GitHub](#)

- Directed **AI coding agents** for the development of a portfolio website, leveraging agentic workflows to generate the frontend stack (Next.js, React, Tailwind CSS) while personally managing the system architecture, UI design, and content strategy.
- Designed the **UI and visual identity**, defining colour palettes, typography, and interactive motion effects (Framer Motion) while curating technical content to showcase projects.
- Managed the **DevOps and deployment**, containerising the application with **Docker** and provisioning a secure, scalable hosting environment on **DigitalOcean**.

## SKILLS

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**Languages:** Python, SQL, C#, JavaScript, R, VBA, MATLAB, LaTeX, html/CSS

**Frameworks & Libraries:** FastAPI, Streamlit, React, Next.js, Tailwind CSS, Pandas, NumPy, Framer Motion

**Cloud, DevOps & Databases:** GCP, Docker, DigitalOcean, PostgreSQL, SQL Server, GitHub, Linux (Raspberry Pi)

**Mathematics:** Financial Mathematics (Option Pricing, Arbitrage Pricing), Time Series Forecasting, Stochastic Analysis, Numerical Simulations, Stochastic Optimisation (Simulated Annealing, Evolutionary Algorithms), Variational Calculus

**Data Science, BI & AI:** Tableau, Looker, SAS, Alteryx, Jupyter, LLM Prompt Engineering, Data Wrangler, Data Visualisation, Data Cleaning

**Professional:** Stakeholder Management, Technical Communication, Cross-functional Collaboration