

# Daniel Bacon

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*Physics graduate with strong computational and data analysis skills, experienced in molecular simulations and financial technology projects. Passionate about applying scientific computing and programming expertise to real-world challenges. Actively seeking opportunities in financial services, data science, AI, and analytical roles.*

## EDUCATION

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### University of Southampton

Sep 2020 – June 2024

- Master of Physics: Second Class Honours (Lower Division)

### Abingdon School

Sep 2014 – July 2019

- A Levels: Physics - A, Maths - A, Chemistry - B, Further Maths - C
- GCSEs: 9 A\*s, 1 A, 1 B

## PROJECTS

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### Stock Trading Bot

May 2025 – Present

- Built a full-stack automated trading dashboard with live portfolio monitoring and strategy visualisation.
- Developed a Flask web app to track performance, open orders, and execute trades in real time.
- Integrated various APIs for live stock data, trade execution, and S&P 500 ETF (SPY) benchmarking.
- Created a dynamic allocation algorithm based on analyst target prices and a score-based strategy.
- Designed a responsive UI using Bootstrap, Plotly, and DataTables with dark mode and auto-refresh.
- Logged trades and portfolio metrics for continuous performance analysis against SPY.
- Implemented a backend caching system for daily analyst data using AWS S3 for efficient retrieval of cached data.
- Deployed the app to Heroku with scheduled background tasks and secure environment configuration.

### University Masters Project

Sep 2023 – June 2024

- Dissertation: *Exploring Particle Dynamics: A Comparative Study of Hard Sphere and Lennard-Jones Potential Models.*
- Built Python-based molecular dynamics simulations using event-driven and Velocity Verlet methods.
- Analysed system behaviour via speed distributions, autocorrelation functions, diffusion constants, and pair correlation functions.
- Simulated 1D and 2D particle systems, reproducing gas, liquid, and solid-like states.
- Applied dimensionless scaling to model real substances like Argon and validated results against theory.

### University Discord Server

July 2020 – June 2024

- Co-founded and managed a University of Southampton Discord server to support student interaction during COVID-19 and beyond.
- Organised and hosted virtual events during lockdown.
- Set up multiple Discord bots for server automation and moderation.
- Server grew to over 2,500 active members.

## SKILLS

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**Programming:** Python, JavaScript, Batch scripting (CMD), HTML, SQL

**Frameworks/Tools:** Flask, AWS (S3), Heroku, Git, LaTeX, Excel

**Libraries:** NumPy, Pandas, Matplotlib, Seaborn, SciPy, Plotly, DataTables

**Other:** Statistics and Applied Mathematics, Data Modelling and Visualisation, Scientific Computing, Experimental Design, API Integration, Web Deployment, Problem Solving, and Technical Communication

## WORK EXPERIENCE

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### **The Crown and Thistle** - Hospitality

Sep 2019 – Feb 2020 & Sep 2024 – Present

*Bar Supervisor and Bar Team Member*

*Abingdon, Oxfordshire*

- Bar work, including solo and team shifts, event functions, and opening and closing duties.
- Promoted to Bar Supervisor in December 2025, which involves leading the bar team, maintaining the bar, organising the cellar and stocktaking.

### **Vermeer Partners** - Financial Services

Jan 2025

*Work Experience*

*London*

- Spent time at a wealth management firm, sitting in on executive meetings, learning about investing in companies and the world of trading, as well as researching the strategy and financial performance of corporations.
- Gained knowledge regarding the investment, financial planning and compliance aspects of the firm.

### **Elliott James Consulting** - Human Resources

Sep 2024

*Work Experience*

*Pangbourne, Berkshire*

- Spent two weeks at a recruitment firm learning about recruitment in the financial services industry.
- Included direct communication with clients.

### **Music Festivals** - Hospitality

2022 – 2024

*Bar Supervisor and Bar Team Member*

*South of England*

- Worked 30 days at various summer music festivals over three years.
- Included being in charge of the main bar at Truck Festival, Steventon.

### **Lady Sew and Sew** - Fast Moving Consumer Goods

Summer 2018

*Work Experience*

*Henley, Oxfordshire*

- Spent a month working at a local retail company.
- Helped with stocktaking and show preparation, for example for Europe's largest quilting and patchwork show, The Festival of Quilts.

### **IQVIA (formerly Quintiles)** - Pharmaceuticals

Summer 2017

*Work Experience*

*Reading, Berkshire*

- Spent two weeks learning about IQVIA, an American pharmaceutical company based in Reading.
- Included researching and presenting about a competing company in a team at the end of the program.

## INTERESTS

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- University of Southampton 1st XI cricket team player and 2nd XI vice captain.
- Social Secretary for the Physics Society at the University of Southampton. Responsibilities included the planning and running of social events with over 100 members.
- Captain of indoor cricket team in the intramural league.
- Took part in two 24 hour charity indoor cricket fundraising events, raising over £5,000.
- Abingdon School 1st XI cricket, including two overseas tours.
- Abingdon School 1st XI football, 2nd XV rugby and other recreational sports such as squash, table tennis, and chess.
- Oxfordshire U17 county cricket development side and Senior 1st XI cricket at local club, playing in the Thames Valley Cricket League.
- Independent travel in Australia during gap year, 2019 – 2020.