Ashwin Biju

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Education

Imperial College London, MEng Computer Science — September 2024 – June 2028
Brampton Manor Academy, A*A*A*A in Maths, Further Maths, Computer Science, Physics — September 2022 – June 2024
Ilford County High School, 12 GCSE Grade 9's — September 2017 – June 2022

Projects and Competitions

QuantFlow Trading Simulator | *Python · Pandas · FastAPI · Scikit-Learn · PostgreSQL* — August 2025

- Built a **full-stack** real-time trading simulator with live Binance data, ML-driven forecasting, and interactive analytics.
- Optimized **low-latency** pipelines using **PostgreSQL, Redis**, and **WebSockets** for high-speed streaming.
- Implemented a **Random Forest** model with feature engineering and automated retraining for next-price prediction.

Cocktail Machine | *C · Raspberry Pi · CAD · Circuit Design* — May 2025 – June 2025

- **Ranked top 3** in cohort and was awarded **'Most Interesting Project'** and selected to present to **ARM**.
- Built a fully automated drinks mixer with custom **CAD chassis, laser-cut parts**, and **hand-soldered circuitry**.
- Programmed **multi-threaded** drink sequencing in **C** on a **Raspberry Pi** with pump control and LCD/button UI.

Tutoring Website | *Python · Django · JavaScript · HTML/CSS* — December 2023 - May 2024

- Developed a **full-stack Django** web application featuring secure user authentication, dynamic course management, and interactive homework assignment systems.
- Integrated **Calendar and OpenAI API** for scheduling and implemented an AI-powered studybot to enhance student engagement.
- Optimized data handling via **Django ORM**, employing complex database queries and aggregate functions for robust performance.

M3 Math Modelling Challenge | *Matlab* — April 2023

- **Led team of 6** to produce 20-page report, reaching **top 10** within UK to progress to final stage of challenge.
- Developed mathematical models within **12 hours** which predicts global growth of E-bike sales from 2025-2028 using variables.
- **Employed MATLAB**, harnessing exponential regression to construct functions for each dataset for Europe and US. Further superposition of both graphs used to compare growth trajectory.

Experience

JP Morgan Technology Summer School — August 2023
Tech Intern | Python · React — *London, UK*

- Led the development of a **budgeting app** that integrated **cloud-native technology (SuperCore)**, enhancing operational efficiency and real-time data processing, leading to an innovative customer experience.
- Implemented sustainable **finance solutions** by designing a carbon-negative banking model aligned with **Doughnut Economics**, focusing on green lending, renewable energy financing, and circular economy initiatives.
- Conducted a comprehensive **SWOT analysis** and developed strategies for customer-centred approaches, transparent reporting, and partnerships for impact, ensuring alignment with long-term sustainability goals.

HSBC LIFT-OFF and LIFT Programme — July 2023
Finance Intern | — *London, UK*

- Explored HSBC Global Banking and Markets division with **ESG sessions** regarding HSBC's future goals of sustainability.
- Demonstrating public speaking and reasoning through debating various topics.
- **Led a team of 6** to present ESG strategies for the food industry, progressing to the next stage: LIFT Programme, where a further deep dive was explored.

Skills

Languages: Python, Java, Kotlin, Haskell, C, SQL, Scala, HTML/CSS
Frameworks/Libraries: React, Tailwind CSS, FastAPI, Pandas, NumPy, Matplotlib, Scikit-learn, LangChain
Databases: PostgreSQL, MongoDB, Redis
Tools: GitHub, VSCode, Jupyter Notebook, Google Colab, MS Office 365, Word, Excel, PowerPoint