

ASHWIN BIJU

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EDUCATION

Imperial College London, MEng Computer Science September 2024 – June 2028
Brampton Manor Academy, A*A*A* in Maths, Further Maths, Computer Science, September 2022 – June 2024
Physics
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 · Pandas · NumPy · Tableau* 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 | *Python · Pandas · NumPy · Tableau* 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, JavaScript, TypeScript, SQL, HTML/CSS

Frameworks/Libraries: React, Next.js, Tailwind CSS, FastAPI, Pandas, NumPy, Matplotlib, Scikit-learn, LangChain

Databases: PostgreSQL, MongoDB, Pinecone, Astra DB, Neon Postgres

Tools: GitHub, VSCode, Jupyter Notebook, Google Colab, MS Office 365, Word, Excel, PowerPoint