

Krish Vasia

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EDUCATION

University of Birmingham

Birmingham, UK

BSc Artificial Intelligence and Computer Science

Aug. 2024 – Present

- Current Modules: Databases and Web Programming (SQL), Functional Programming (Haskell), Artificial Intelligence 2, Operating Systems and Systems Programming, Security and Networks, Software Engineering.
- First Year Modules: Data Structures and Algorithms, Theories of Computation, Object-Oriented Programming (Java), Computer Systems and Professional Practice, Mathematics and Logic, Artificial Intelligence 1.

Queen Mary's Grammar School

Walsall, UK

A Levels: Computer Science (A), Maths (A), Physics (A).

Aug. 2017 - May 2024

EXPERIENCE

Technology Discovery Day

April 2025

Susquehanna

Virtual

- Explored low-latency infrastructure and data management systems crucial for Systematic Trading.
- Analysed key financial products, including Equities and Derivatives (Futures/Options), to understand instrument functionality and complex market structure.
- Modelled market reactions to large-scale events (e.g., US Tariffs) to evaluate volatility and the principles of risk assessment across asset classes (Equities and Currencies).

Python and GCSE Computer Science Tutor

Sep. 2023 – Aug. 2024

School of Coding

Wolverhampton, UK

- Delivered one-to-one and group Python lessons, specializing in advanced concepts such as Object-Oriented Programming (OOP), to prepare students for higher-level computer science.

Technology and Data Work Experience

Aug. 2023

British Medical Journal

Virtual

- Explored core Business Intelligence (BI) and Data Engineering concepts, analysing content pipelines and CRM/marketing analytics that inform strategic decision-making.
- Analysed real-world site performance data, interpreting key metrics (Users) across dimensions (Channel Group, Country, Page Title) and presenting a data-driven overview to senior employees to demonstrate strategic insights.

PROJECTS

Market Anomaly Detection (Isolation Forest) | *Python, Scikit-Learn, Pandas*

Jan. 2025 - Present

- Developed an unsupervised anomaly detection system using an Isolation Forest algorithm to identify structural market breaks and high-volatility "Flash Crash" regimes.
- Engineered a multidimensional feature set—integrating rolling Z-scores of log-returns, volume surges, and realized volatility—to isolate market outliers and enhance risk mitigation strategies.

Terraform Automation | *Terraform*

Nov. 2025 - Present

- Built an Infrastructure-as-Code (IaC) solution using Terraform to automate the end-to-end deployment of a website on Microsoft Azure.
- Designed and implemented a modular structure for Azure provisioning, reducing configuration complexity and streamlining deployment cycles.

Algorithmic Pairs Trading (Kalman Filter) | *Python, NumPy, Pandas*

Dec. 2025

- Programmed a market-neutral pairs trading strategy using a Kalman Filter to recursively estimate time-varying hedge ratios, achieving a 1.67 Sharpe Ratio over a 10-year backtest.
- Architected a comprehensive backtesting pipeline in Python to manage data cleaning, rolling Z-score signal generation, and risk-adjusted performance tracking.

Grid-Based Roguelite Engine | *Python*

Jan. 2024

- Constructed a matrix-based world constructor to manage spatial boundaries and coordinate-mapped entities.
- Implemented a persistent state management system to handle local user authentication and game-state recovery via file-system I/O.

ACTIVITIES & ACHIEVEMENTS

UKMT Math Challenge

Sep. 2018 – Sep. 2023

- Recognized for superior performance in mathematical analysis and problem-solving, achieving Kangaroo qualification (Top 5%) in 2023 and securing 3x Gold (Top 8%), 2x Silver (Top 24%), and 1x Bronze (Top 40%).

100 Days of Code

Dec. 2025 – Present

- Engaged in the "100 Days of Code" challenge, demonstrating commitment to continuous learning and deepening proficiency in Python and advanced programming concepts.