Tom Matson

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EDUCATION

University of Bristol | BSc (Hons) Computer Science *Sept 2024 – June 2027*

- **First-Year Result: 67% (High 2:1)**
- **Key Modules:** Advanced Algorithms & Data Structures, Computer Systems (Go), Software Engineering, Programming Language & Computation, Object-Oriented Programming (Java), Computer Architecture, Imperative & Functional Programming (C, Haskell).

College of Richard Collyer | A-Levels *Sept 2022 - June 2024*

- Mathematics (A*), Further Mathematics (A), Computer Science (A), Physics (A).

EXPERIENCE

Product Security Intern | News UK, London *June 2025*

- Investigated the security implications and vulnerabilities of using AI-generated code in production environments, presenting findings to the senior product security team.

Software Engineering Intern | Kaluza, Bristol / London *June 2023*

- Engineered a custom data pipeline in Python to automate a manual data aggregation task, freeing up several hours of senior engineering time weekly and impressing team leads with the quality and speed of delivery.

Mentee | Zero Gravity Mentorship Program *Sept 2022 – Present*

- Selected as a high-potential undergraduate for a competitive national mentorship scheme, receiving ongoing professional development and career guidance from industry leaders.

PROJECTS

Crest – AI-Powered Revision Platform | Full-Stack Commercial Product *June 2025 - Present*

- **Architected and single-handedly launched** a full-stack commercial application to the Apple App Store, managing the entire product lifecycle from concept to deployment and monetization.
- **Engineered a high-performance, asynchronous RESTful API** using FastAPI to manage AI-driven exam marking, user authentication, and personalized revision plan generation.
- **Built a responsive and stable React Native frontend**, implementing robust client-side architecture including smart caching and network resilience patterns to ensure a high-quality user experience.

Hardware-Level DES Block Cipher | Low-Level Systems Design *Nov 2024*

- **Achieved a grade of 93%** by engineering a complete, hardware-level implementation of the 16-round Data Encryption Standard (DES) algorithm in Verilog at the Register-Transfer Level (RTL).
- **Demonstrated mastery** of low-level computer architecture, digital logic design, and fundamental cryptographic principles, proving ability to excel in complex systems engineering challenges.

Stochastic Pair Trading Bot | AI & Quantitative Analysis *Mar 2025 - Present*

- **Achieved a positive return** during a 7-week backtest in a significant market downturn, demonstrating the strategy's alpha-generating capability in adverse conditions.
- **Developed an AI-driven bot** using a Gradient Boosting model and a Reinforcement Learning agent to execute a pair trading strategy on cointegrated assets, processing over 2 million data points.

Scotland Yard AI Agent | Game Theory & Search Algorithms *Feb 2025 - Mar 2025*

- **Designed and implemented an intelligent agent** in Java to play the board game Scotland Yard, utilising Monte Carlo Tree Search (MCTS) for optimal move decision-making.
- **Engineered a custom non-Markovian algorithm** to enhance the AI's predictive capabilities by allowing it to reason about the opponent's historical patterns and potential future strategies.
- **Achieved a First-Class mark of 76%** for the project, demonstrating strong skills in Object-Oriented design, complex algorithm implementation, and applying AI to strategic problems.

SKILLS, ACHIEVEMENTS & AWARDS

Programming Languages & Frameworks: C++, Python (Proficient), Java (Proficient), Go, C, Verilog, JavaScript, SQL, FastAPI, React Native

Technical Skills & Concepts: Data Structures & Algorithms, AI/ML, Full-Stack Development, Git, Computer Architecture, Network Resilience, Quantitative Analysis, Pandas, SQL, Imperative + Functional + Object-Oriented programming

Achievements: GCSEs: Awarded Best Computer Science & Best Physics Student. Achieved a GCSE average of 8.5