

# 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 of AI-generated code, identifying and categorizing over **10 potential vulnerability classes** in production environments.
- Presented key findings and strategic mitigation recommendations directly to the **Head of Product Security**.

### Software Engineering Intern | Kaluza, Bristol / London

June 2023

- Developed a custom data pipeline in Python that automated a key data aggregation task, **saving an estimated 144 hours** of senior engineer time annually.

### Mentee | Zero Gravity Mentorship Program

Sept 2022 – Present

- Selected for a competitive national mentorship scheme from a pool of over 8,000 applicants, placing in the **top 19%** of candidates for a place.

## PROJECTS

### Crest – AI-Powered Revision Platform | Full-Stack Commercial Product

June 2025 - Present

- Architected and launched a full-stack commercial application, now managing its entire lifecycle including monetization and feature development based on user feedback.
- Published the app on the Apple App Store, currently managing an open beta with **20+ active users** to gather performance data and guide improvements.
- Maintaining a high-performance, asynchronous RESTful API, which I engineered with FastAPI to reduce exam marking time by **87.5%**.
- Iterating on a responsive and stable React Native frontend, initially built to establish a robust, high-quality user experience.

### Hardware-Level DES Block Cipher | Low-Level Systems Design

Nov 2024

- Scored a top-tier grade of **93%** for constructing 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

- Designed an AI-driven trading bot that generated a **23.4% absolute return** over a 9-month backtest by executing a pair trading strategy on cointegrated assets.
- Leveraged a Gradient Boosting classifier for trade signals and a Reinforcement Learning agent for dynamic position sizing and risk management.

### Scotland Yard AI Agent | Game Theory & Search Algorithms

Feb 2025 - Mar 2025

- Earned a First-Class mark of **76%** for designing and implementing an intelligent agent in Java to play Scotland Yard.
- Employed Monte Carlo Tree Search (MCTS) for move decision-making and a custom non-Markovian algorithm to reason about opponent history.

## SKILLS, ACHIEVEMENTS & AWARDS

**Languages:** C++, Python, Java, Go, C, JavaScript, SQL, Verilog

**Frameworks & Libraries:** FastAPI, React Native, Pandas

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

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