Freddie Woodruff - Software Engineer

London
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PROFILE

A self-taught programmer with a substantial programming portfolio, specialising in asynchronous and cryptographic systems engineering. Physicist and accountant. Experienced manager with a passion for learning.

Portfolio projects

- HTTPS web server
  - Built from scratch in C++23
  - HTTP/2 over TLS 1.3
  - RFC-compliant
  - Homemade elliptic curve library
  - Served at freddiewoodruff.co.uk from a Raspberry Pi 1B
- Chess game
  - Java Swing and Objective-C GUIs, alpha-beta pruned minimax search tree and opening book

Other projects include physics simulations and games, a Rust asynchronous runtime, lock-freedom experiments and a homemade neural network, posted at github.com/fwoodruff.

PROFESSIONAL EXPERIENCE

Applied Blockchain, London - Information Security   **September 2023 - Present**

Software Engineer

- Built and shipped the early access Silent Data platform to a small customer, leading to their acquisition by a DAX 40 PLC
- Designed and drafted the patent for a trusted execution communication protocol
- Led meetings with product managers at an S&P 500 PLC, beta-testing their novel trusted execution platform
- Built a trusted execution distributed system on top of this platform
- Shipped this product, Silent Data, to a paying FTSE 100 customer

Genetic Microdevices, London - Biotechnology   **March 2023 - September 2023**

Lead C++ Developer

- Implemented tests to refactor a 30000 line extravaganza down to 2000 lines and reimplemented an MFC/Root GUI using Qt
- Replaced SPI to analog drivers with new USB voltage drivers and voltmeters
- Designed an algorithm to convert raw noisy video output into a statistical P-value for protein detection

Deloitte, London - Financial Audit and Assurance   **September 2018 - December 2022**

Assistant Manager

- FTSE 250 engineering audit client
  - Managed a team of 5 investigating contract revenue accounting
  - Responsible for understanding the procure-to-pay process
- Completed the professional level of the ACA (ACA part-qualified), 13 exams and project report passed to date.
- Ran Lunch and Learn Excel workshops

Senior Associate

- FTSE 100 natural resources audit client

Associate

Other roles include catering, tutoring and finance internships

EDUCATION

Durham University, United Kingdom   **October 2013 - June 2017**
MPhys Physics: Upper Second Class Honours (2:1)
Dissertation on Novel Wave-plates for Teraherz Radiation
Rowed for both University College and Collingwood College
President of the Durham University Conservative Association

Winchester College, United Kingdom   **September 2007 - June 2012**
Pre-Us: Physics (D1), Chemistry (D2)
A-levels: Maths (A*), Further Maths (A)
GCSEs: 8 (A*), 1 (A) (including A's in English and Maths)

ADDITIONAL SKILLS AND ACHIEVEMENTS

Bicycled coast-to-coast across Canada and then from London to the Arctic Circle. Grade 8 piano