

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
 - 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

- Independently built the data security and cryptographic components of the company flagship product
- Authored a patent for our trusted execution communication protocol
- Led meetings with a supplier and integrated their trusted execution platform into the product
- Led security work following the Trail of Bits security audit
- Shipped this product, Silent Data, to a number of paying customers

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 Terahertz 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