

Freddie Woodruff - Software Engineer

London

+ 44 7748 453287; fwoodruff2@gmail.com; linkedin.com/in/freddie-woodruff

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
 - Homemade elliptic curve library
 - TLS 1.2 and HTTP/1.1 implementations, marked secure by browsers
 - Montgomery modular arithmetic after profiling
 - C++20 coroutines for concurrency and multiplexing
 - Served at freddiewoodruff.co.uk from a Raspberry Pi 1B
 - Cross-compiled on an AWS EC2 instance
- Chess game
 - Bitboard and char array board representations for legal move identification
 - 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

- Modified a 'zero knowledge rollup' (a fancy database) to communicate using a custom transport layer protocol attesting to SGX measurements (extended TLS), and implemented a proof of ownership signature scheme for RPC queries
- Challenged security assumptions resulting in substantial changes to product architecture

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 troponin detection

Deloitte, London - Audit and Assurance

September 2018 - December 2022

Assistant Manager

- FTSE 100 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.
- Running Lunch and Learn Excel workshops

Senior Associate

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