

Ilan Iwumbwe

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Profile

I am keen to learn new skills and become a competent problem solver and engineer. I do this by challenging myself with projects which introduce me to unfamiliar concepts, and exercise my pre-existing skills.

Education

Imperial College London

Oct 2022 – June 2026

MEng Electronic and Information Engineering

- **First year modules:** Mathematics, Analysis and Design of Circuits, Digital Electronics and Computer Architecture, Programming for Engineers (C++), Electronics Design Project
- **Second year modules:** Mathematics and Statistics, Instruction Architectures and Compilers, Software Systems, Discrete Maths, Control Systems, Signals and Systems, Electronics Design Project
- **Third year modules:** Advanced Computer Architecture, High Level Programming, Deep Learning, Machine Learning, Mathematics for Signals and Systems, Network and Web Security, System Performance Engineering, Advanced Creative Writing

The National Mathematics and Science College

Sept 2020 – June 2022

A levels

Subjects taken: Further Maths, Maths, Computer Science, Physics

Experience

CPU Performance Verification Intern

Cambridge

Arm

April 2025 – Sept 2025

- Wrote microbenchmarks in C to calculate latency and bandwidth from memory to the CPU while taking into account varying characteristics of the memory controller
- Wrote performance counters in Verilog to monitor AXI transactions at the memory controller, collect statistics, and use them to calculate actual latency and bandwidth at the memory controller

Undergraduate Researcher

London

Imperial College London

July 2024 – Sept 2024

- Worked with a colleague to write a tool that finds bugs in quantum compilers
- Found 17 bugs in Pytket, Cirq and Qiskit

Software Engineer Intern

Remote

Imperial College London

June 2023 – Sept 2023

- Implemented a feature in [Issie](#) to allow users to import circuits into their projects
- Redesigned circuit simulation UI to look a bit cleaner

Publications

QuteFuzz

[repo](#) [↗](#)

Published on 30/10/2024 at [PlanQC](#) [↗](#), this paper presents our novel work in generating quantum circuits with control flow and subroutines, and the bugs we found in quantum compilers as a result

Projects

Technologies used: C, C++, Python, Bash

RISCV-assembler

[repo](#) [↗](#)

A minimal assembler for RV32I

Ylva

[repo](#) [↗](#)

A UCI compliant chess engine.

I had a lot of fun writing the code for Ylva. I learnt a lot of new techniques and strategies for optimising code, that are not only applicable when writing a chess engine.

RISCV-CPU

[repo](#) [↗](#)

Worked in a team of 4 to implement a CPU capable of running the full RV32I instruction set

I practiced my team-working, communication and listening skills. I also gained a deeper understanding of pipelining and hazard control

Hobbies

Piano, Football, Reading, Boulderling, Movies