

# 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  
Grade: 65%
- **Second year modules:** Mathematics and Statistics, Instruction Architectures and Compilers, Software Systems, Discrete Maths, Control Systems, Signals and Systems, Electronics Design Project  
Grade: 64%
- **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  
Grade: 64%

### The National Mathematics and Science College

Sept 2020 – June 2022

A levels

**Subjects taken:** Further Maths, Maths, Computer Science, Physics  
Grade: 4 A\*

## 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

[conference](#) 

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

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

### QuteFuzz

*repo* [↗](#)

A bug finding tool for quantum compilers written with [Benny](#) [↗](#) under the supervision of [Dr. John Wickerson](#) [↗](#)

I learnt a lot about how to work in a team, and how to communicate and discuss ideas. This allowed the project to go through many iterations while getting improved using input from both of us.

### 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

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Piano, Football, Reading, Boulderling, Movies