

Jason Zheng

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Education

Imperial College London

MENG ELECTRONIC AND INFORMATION ENGINEERING

London, UK

Sept 2018 – June 2022

- Predicted for First-Class Honours; 2nd Year Grade: 71.22%, 1st Year Grade: 68.27%

Auckland Grammar School

GCE A LEVELS

Auckland, NZ

Jan 2013 – Dec 2017

- NZ Scholarships: Calculus and Statistics (awarded to top 3% of country)
- A Levels: A*s in Biology, Chemistry, Physics, Mathematics; A in Further Mathematics

The University of Auckland

COMPSCI 101: PRINCIPLES OF PROGRAMMING (YOUNG SCHOLARS PROGRAMME)

Auckland, NZ

Mar 2017 – July 2017

- Achieved A+ grade (99%) in first-year University paper taken during Year 13

Experience

Imperial College London

UNDERGRADUATE TEACHING ASSISTANT

London, UK

Sept 2020 – present

- Responsible for teaching students C++ programming concepts in a clear and concise manner

STEM OUTREACH AMBASSADOR

Nov 2018 – present

- Duties involve giving tours of campus to visitors and prospective students, answering questions and providing insights about the College, assisting with virtual and in-person events, mentoring students to promote STEM, tutoring students in A-Level Maths

Arm

GPU SOFTWARE ENGINEERING INTERN

Cambridge, UK

June 2020 – Sept 2020

- Integrated the ARM GPU software model with **QEMU** to enable testing via the kernel driver, with the goal of deprecating their usermode driver
- Investigated its feasibility by writing a **Bash** script to automate testing and comparing execution times and the number of passing test cases
- Extended a **kernel driver** written in **C** to allow it to interoperate with QEMU
- Used a memory-backend-file to share memory between the Host and Guest, taking into account their different memory mappings
- Added new interrupt requests to facilitate reading and writing to GPU registers via shared memory
- Implemented virtio-serial consoles to raise interrupt requests using FIFO queues

MyTuition

MATHS AND SCIENCE TUTOR

Auckland, NZ

Jan 2018 – Sept 2018

- Prepared and adapted lesson plans for each student according to their ability and style of learning, with students achieving A and A* grades
- Improved communication, time management and interpersonal skills

Projects

A Pigment of Your Imagination

Oxford Hack 2019

- Created an Android app in **Kotlin** and **Java** that turns photos into blank colouring stencils
- Implemented edge detection algorithm and scanline fill algorithms to find shape outlines and fill colours within these lines
- Finalist for Most Stylish Hack

Composed

IC Hack 2020

- Designed and implemented a program to convert monophonic audio files into sheet music by analysing its frequency components
- Used a Fast Fourier Transform algorithm to convert audio from time domain to frequency domain

C to MIPS Compiler

EIE2 Language Processors

- Wrote a compiler in **C++** to generate **MIPS assembly** from subset of pre-processed C90
- Wrote a transpiler to translate a subset of C into equivalent **Python**
- Used **Flex** and **Yacc** to implement lexing and parsing functionality

MIPS CPU Simulator

EIE2 Computer Architecture

- Developed a CPU simulator in **C++** to execute MIPS-1 big-endian binaries, and created a testbench to verify correctness of the simulator
- Referenced the MIPS ISA specification to ensure parity between emulated instructions and the real hardware

Skills and Interests

Programming

C++, C, Python, Java, Verilog, MIPS Assembly, ARM Assembly, MATLAB

Tools

Git, Linux, SQL, Flex, Yacc, Vivado HLS, CAD (Autodesk Inventor, Fusion 360)

Other Skills

English (native), Mandarin Chinese (proficient), First Aid, Full UK and NZ driving licences

Volunteering

EIE Year 3 Academic Rep; elected to advocate for students, collect feedback and pursue improvements to the course
Secretary ('20/21) and Publicity Officer ('19/20) of Imperial College Wind Band; responsible for sending weekly emails, organising rehearsal and concert venues, designing posters, promoting concerts and merchandise sales
Tutored maths and sciences weekly from 2016 to 2019 (Asian Cultural Group; Pimlico Connection)

Music

ABRSM Grade 8 Piano and Clarinet; previous member of Symphony Orchestra, Concert Band, Production Orchestras