

EDUCATION

University of Manchester

Computer Science, B.Sc. (Hons.) | Achieved 1st Class with Honours

Manchester, UK

Oct. 2020 – July 2023

- Modules included: System Architecture, Advanced Distributed Systems, Algorithms and Data Structures, and Microcontrollers
- Dissertation: “A Generic Framework for Distributed Computing”, covering compilers and distributed systems

EXPERIENCE

Arm Ltd.

Graduate Engineer | C, C++, DynamoRIO, SystemVerilog

Cambridge, UK

Sept. 2023 – Current

- Implemented cache performance modeling and analysis using DynamoRIO and C++
- Presented cache performance modeling results at internal company conference
- Designed, implemented, verified, and synthesized functional hardware prototypes using SystemVerilog
- Implemented patch series to improve linux memory management performance and correctness

Part-Time Undergraduate | C++, Make, Batch, CMake, LLVM, Zephyr

July 2021 – Mar. 2023

- Part of the PTUG Social Committee, organising in-person, online, and hybrid events for other PTUGs
- Ported the Zephyr build system to support the LLVM and Armclang toolchains
- Ported existing Make and Batch build scripts to use CMake
- Participated in daily standups, bi-weekly sprint reviews, and code review

PROJECTS

A Generic Framework for Distributed Computing | C, Compilers, Networking, Make

Sept. 2022 – July 2023

- Designed a custom compute kernel language influenced by C11 and OpenCL
- Implemented a bytecode compiler and interpreter for the aforementioned compute kernel language
- Implemented a custom network protocol, and various distributed algorithms (e.g. hash-table, memory, synchronisation)
- Implemented a mandelbrot set compute kernel as an example of the platform

RoboSoc Orchestra Team | C, C++, Embedded, ARM

Sept. 2022 – July 2023

- Served on the Conductor team, architecting and implementing the control system for the orchestra
- Planned the protocol and interfaces for communicating between the conductor and different musicians
- Implemented a MIDI parser, the conductor user interface, and the conductor backend

Hyperloop Manchester | C, C++, Embedded, ARM

Nov. 2020 – Jan. 2022

- Served as the Software Team Head, architecting the software aspect of the pod
- Researched and implemented standards and algorithms for driving a Hyperloop pod safely
- Implemented beginnings of RTOS, including startup code for Teensy 4.1 and beginnings of USB driver
- Organised work using Jira and Kanban, used Git as source control, and had weekly standups to track progress

UniCS GameDev | C#, Unity, Typescript, Next.js

Nov. 2020 – Nov. 2021

- Served as Co-Head of the UniCS GameDev society, leading the development team
- Collaborated with team members in an Agile environment with weekly standups
- Planned tasks and estimating their requirements (time-wise and content-wise)
- Planned, researching, writing, and delivering tutorials on C# and Unity
- Designed and implemented the UniCS GameDev website in next.js using Typescript

SKILLS

Soft Skills: Communication, Teamwork, Leadership, Project planning, Organisation, Time management

Languages: System Verilog, C, C++, C#, CMake, Make, Bash, Python, Java

Frameworks: ASP.Net, Unity, PlatformIO

Developer Tools: Git, Jira, Visual Studio, VSCode

INTERESTS

Outside of computer science and software engineering, I enjoy going to the gym, bouldering, swimming, and am a 2nd Dan black belt in DART Karate (where I am an instructor to younger students). I have quite a few ongoing personal projects, including a 3D open-world sandbox game built from scratch, as well as creating my own web server and linux distribution for my raspberry pi. I also take part in Micromouse competitions, building and programming robots in FORTH to complete various courses (including line following, wall following, and maze solving).