

Zihao (Harry) Liu

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Personal webpage: <https://harryrrah76.github.io/>

EDUCATION

University of Edinburgh

Edinburgh, United Kingdom

Master's Degree in High Performance Computing

Sep. 2023 – Aug. 2024

- Member of TeamEPCC - Participated in the International Supercomputing Conference (ISC) Student Cluster Competition (SCC), held in Germany at May 2024.

University of Bristol

Bristol, United Kingdom

Bachelor's Degree in Electrical and Electronic Engineering

Sep. 2019 – Jun. 2023

- **Grade:** Second Class Honours (First Division).

Shenzhen College of International Education

Shenzhen, China

GCE A-Level

Aug. 2017 – Jun. 2019

- **Grade:** Computer Science (A*), Mathematics (A*), Physics (A*). Economics (A).

WORK EXPERIENCES

Arm

Manchester, United Kingdom

Graduate Engineer

Sep. 2024 – Present

- Dedication to rotate between 3 to 5 areas within System IP.
- *RTL Design* - Microarchitecture and logic implementation of interconnect and memory controller designs.
- *Design Verification* - Develop sophisticated test bench components to debug next generation designs with both formal and simulation based methods.
- *Physical Design/Implementation* - Innovate, develop and deploy the latest implementation techniques to push the boundaries of power efficiency and influence our physical design library development.
- *Software/Tooling* - Build and maintain the software infrastructure to develop and analyze engineering data and flows.
- *Performance Modeling* - Drive development of new high-performance interconnect IPs, optimizing infrastructure systems, and productizing models.

Huawei Technologies Research & Development (UK) Ltd

Edinburgh, United Kingdom

CPU Architecture Intern

Apr. 2024 – Aug. 2024

- Worked on Gem5 checkpointing infrastructure to facilitate CPU researches.
- Generated Gem5 checkpoints after an client-server application (e.g. Redis, MySQL) has reached steady state and started the query process using atomic CPUs that can be restored with timing CPUs afterwards for further research.
- Worked on the restoration of QEMU-based snapshots (checkpoints) using Gem5 atomic and timing CPUs.
- Developed a Python tool to parallelise the restoration of multiple checkpoints, it is also able to launch multiple Gem5 simulations configured with same set-up parameters but different boot scripts at once.
- Worked on creating and customising root file systems, disk images and kernels for QEMU and Gem5 usage.

Arm

Manchester, United Kingdom

Hardware Engineering Intern

Jul. 2023 – Mar. 2024

- Interned in the System Memory Management Unit (SMMU) Design Team.
- Worked on the the autogeneration of RTL designs and UVM testbenches using Python, which aids in reducing discrepancies in register values across extensive designs and automates redundant and error-prone coding activities.
- Modified and optimised part of the autogeneration flow for better readability and reusability.
- Enhanced the current autogeneration process and developed new, reusable code capable of producing multiple IP-XACT files, functional blocks for RTL designs, and UVM files for functional coverage.
- Engaged in the development of both the design and the verification elements using SystemVerilog.

Huawei Technologies Research & Development (UK) Ltd

Cambridge, United Kingdom

Research Intern

Feb. 2023 – Jun. 2023

- Developed and implemented an Continuous Integration (CI) using Gitlab CI and Jenkins.
- Optimized the distribution of computational resources by establishing a Kubernetes machine cluster for testing.
- Customised Docker images for multiple test environments and integrated them into the Kubernetes cluster.
- Developed Jenkinsfile for nightly regression and merge request and other types of pipelines. Employed multiple Jenkins plugins to enhance pipeline functionality such as cross-pipeline triggering and Email extensions.
- Developed aggregated test report generation script using Python and Pandas to analyze LLVM testsuite logs, producing both numerical and graphical regression statistics based on past pipelines.

FixMyCrack

Bristol, United Kingdom

Technician

Aug. 2022 – Jan. 2023

- Assessed and repaired various mobile phones (screen & battery replacement and refurbishment for iPhone 6 to 11).
- Worked in parallel with other technicians and assisted in market research for branches at Exeter and Southampton.
- Providing a positive customer experience, ensuring customers are satisfied with the service, including explaining the repair process in an understandable way to customers with no technical background.

SKILLS & INTERESTS

Skills: English (Fluent), Chinese (Native), Python, C, Linux, Git, Docker, QEMU, Gem5

Interests: Badminton, Volleyball, League of Legends