

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 – Sep. 2024

- Member of TeamEPCC - Participating in the International Supercomputing Conference (ISC) Student Cluster Competition (SCC), holding 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) – 68%.

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

Hardware Engineering Intern

Jul. 2023 – Present

- 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.
- Enhanced the current autogeneration process and developed new, reusable code capable of producing multiple IP-XACT files, functional blocks for RTL designs, and over 100,000 lines of UVM testbenches within seconds.
- Engaged in both the design and the verification elements (functional coverage) within the scope of SystemVerilog.
- Rewritten part of the autogeneration flow using OOP for better readability and reusability.

Huawei Technologies Research & Development (UK) Ltd

Cambridge, United Kingdom

Research Intern

Feb. 2023 – Jun. 2023

- Developed and implemented an Continuous Integration (CI) using Jenkins from zero to one for the Turing CPU team.
- Optimized the distribution of computational resources by establishing a Kubernetes machine cluster for testing.
- Designed various 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 regression pipelines.

PROJECT EXPERIENCES

AHB Bridge in SoC (VHDL)

University of Bristol

Group Leader

Sep. 2022 – Oct. 2022

- Constructed a microprocessor-based System-on-Chip and replaced the Leon3 processor with the Arm Cortex-M0 in a System-on-Chip, designed and implemented a bridge between the Cortex-M0 and the rest of the SoC infrastructure to establish compatible communication.
- Worked with professionally written VHDL and Verilog code and used advanced concepts such as VHDL records and generate statements, and tested the implementation efficiency by co-simulating Verilog and VHDL using Xilinx ISE.
- Received high appraisal on the performance of our group's microprocessor design by **exceeding the best achievable clock frequency** stated by the professor in place & route.

Peak Detector (VHDL)

University of Bristol

Group Leader

Apr. 2021 – Jun. 2021

- Familiarized with FPGA design in VHDL and produced a Peak Byte Detector Program that detects peak values in hexadecimal input series.
- Implemented two-phase handshake protocols using logic gates to achieve robustness and validity of data from the generator to the processor; constructed ASM charts and FSM for designing state transition codes in the project.

SKILLS & INTERESTS

Skills: English (Fluent), Chinese (Native), Python (Proficient), C (Intermediate), Linux, Bash, SystemVerilog, OOP.