

CHEN Zi Hang

Nanjing University of Science and Technology

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Personal Profile

An undergraduate student at school of computer engineering, Nanjing University of Science and Technology, undertaking the computer architecture and computer system. Zealous about computer architecture and with 9+ months of experience specialising in GEM5, NEMU(Nanjing university emulator), Xiangshan processor, and Verilog development.

Education

Nanjing University of Science and Technology

Nanjing, China

B.S. in Computer Science and Technology (expected)

Sept 2019 - Current

- Leader of the school team of NSCSCC(National Student Computer System Capability Challenge) 2021
- Leader of a school research project about *pipeline RISC-V processor*
- Working as a teaching assistant for MIPS CPU Design in autumn 2021 and autumn 2022

Work Experience

The Hong Kong University of Science and Technology (Guangzhou)

Research Assistant

Feb 2023 - Current

- Focus on GPGPU architecture.
- **Technical Skills:** MGPUSim, Opencl.

Institute of Computing Technology, Chinese Academy of Sciences

Research Assistant

March 2022 - May 2021

- Received a comprehensive and general training on computer architecture and computer system.
- Learned basic operations on GEM5(a sophisticated system simulator), including configure a out of order processor, run benchmarks and workloads, measure more useful metrics
- Add some functions to the NEMU(Nanjing university Emulator), exploit NEMU to generate some workloads and checkpoints, run RISC-V version of Linux on NEMU
- **Technical Skills:** GEM5, NEMU, QEMU, Python, C++, C, Ubuntu Linux, Linux tools, Git, Bash.

Beijing Institute of Open Source Chip

Intern

June 2022 - Feb 2023

- Tested simpoint profiling on NEMU and generated checkpoints of special workloads.
- collaborated to implement two outstanding functions called *difftest* and *GCPT restorer* on GEM5.
- explored a new technique called *speculative renaming* on GEM5
- collaborated to implement a new microarchitecture called *decoupled frontend* on GEM5, which is combined with a *loop detector*, a *TAGE predictor* and a *next stream predictor*
- Aligning the GEM5 with Nanhu(2nd XiangShan processor) microarchitecture
- **Technical Skills:** GEM5, NEMU, C++, C, Python, Ubuntu Linux, Git, Zsh.

Nanjing University of Science and Technology

Teaching Assistant

November 2021 & August 2022

- Taught a courser called MIPS CPU design that students need to design their own MIPS processor.
- prepared teaching materials including slides and guidelines
- solved students' related problems and checked students' lab's results and projects

Skills

Programming C/C++, Java, Python (NumPy, matplotlib etc.), HTML/CSS, SQL, Verilog.

Miscellaneous Ubuntu Linux, Shell (Bash/Zsh), \LaTeX , Markdown, Microsoft Office, Git, Vivado, GEM5.

Interests

Linux I'd like to explore and try different operating system, such as different versions of Linux.

Technical Writing I write some articles about my researches and works, write down some notes and impressions about some famous or fantastic papers and upload them on my social media.

Workshops I enjoy communicating with other researches and exchanging our experiences or ideas, so I actively participate the workshops or conference organised by my company or other institutes.

Languages

English Professional proficiency

Chinese Native proficiency