

# YIWEI YANG

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## EDUCATION

**UC Santa Cruz**, Ph.D. Student 08/2022 – 06/2028

- Major: Computer Science, advised by Andrew Quinn. 22 Fall TA of Computer Architecture

**ShanghaiTech University**, Undergraduate 09/2018 – 06/2022

- Major: Computer Science, finished Compiler, Network, Database, OS, CA, Convex, RL, Parallel Computing. 21& 22 Spring TA of Compiler

## WORK EXPERIENCE

**Jump Trading**, Shanghai, China 07/2020 – 09/2020

(Linux Team) Production Engineer Intern

- High Frequency Trade Order Book simulation applying Linear Regression Method.
- Designed a user interface to automate the core affinity of jobs.
- Designed an eBPF exporter of GPFs full OSS lifetime traces for better reporting the bottleneck.

## RESEARCH EXPERIENCE

**Storage Systems Research Center, UC Santa Cruz** 08/2022 – Present

(Graduate Research) Assistant

- Data-driven CXL.mem allocation, prefetching, and replacement policies. 🏆
- Make Hardware Software Co-design for on CXL.cache data movement 📦
- Make Virtual Machine migration based on WebAssembly and WASI 📄
- Make cross kernel-userspace eBPF observation for distributed system 🐛

## PUBLICATIONS

”**Extending Applications Safely and Efficiently**” OSDI25 Yusheng Zheng, Tong Yu, **Yiwei Yang**, Yanpeng Hu, Xiaozheng Lai, Dan Williams, Andrew Quinn.

”**Transparent and Efficient Live Migration across Heterogeneous Hosts with Wharf**” Preprint **Yiwei Yang**, Aibo Hu, Yusheng Zheng, Brian Zhao, Xinqi Zhang, Andrew Quinn

”**KEN: Kernel Extensions using Natural Language**” eBPF24 Yusheng Zheng, **Yiwei Yang**, Maolin Chen, Andrew Quinn.

”**CXLMemSim: A pure software simulated CXL.mem for performance characterization.**” Yarch23 **Yiwei Yang** Pooneh Safayanikoo, Jiacheng Ma, Tanvir Ahmad Khan, Andrew Quinn.

”**Attack as Defense: Characterizing Adversarial Examples using Robustness.**” ISSTA21 Zhao, Zhe, Guangke Chen, Jingyi Wang, **Yiwei Yang**, Fu Song, and Jun Sun.

## SELECTED PORTFOLIOS

**bpftime** <https://github.com/eunomia-bpf/bpftime/> Make cross boundary observation for the kernel

**MVVM** <https://github.com/Multi-V-VM/MVVM> Live migration over WebAssembly with WASI support

**Bede-linux** <https://github.com/SlugLab/Bede-linux> Per Process RSS Node Limit Linux kernel for CXL

## SKILLS

- **Programming Languages:** not limited to any specific language, and experienced in Python/C++/Rust, comfortable with Golang/C/Java/Scala/TypeScript (in random order).
- **System:** Specialist in Compiler & Performance Analysis, familiar with LLVM, MLIR, Gem5, WASM, gdb, eBPF, qemu, chisel, Linux mm & observability subsystem.
- **Machine Learning:** familiar with general knowledge of machine & reinforce learning, interested of System for LLM for Sys.

## MISCELLANEOUS

- Interests: HPC, Architecture, Security, JIT, CXL, LLM4Sys4LLM, etc.
- Lead GeekPie\_HPC *Ranked 2*, SC-SCC21. *Ranked 4*, ISC22. Advise Not-Slow-Slug *Ranked 2*, ISC23.
- Advise Kiki Zhang, Zhen Cao to be Ph.D. students.
- Google Summer of Code Mentor for BPFTime