

# YIWEI YANG

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## EDUCATION

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

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

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

- Major: Computer Science, finished Compiler, Network, Database, OS, CA, Convex, RL, Parallel Computing. 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.
- Applied salt and jinja to automate scheduling of jobs and assigning affinity of cpu cores in Linux DevOps.
- Applied gobidng of gobpf to try IOVisor stuff.

## RESEARCH EXPERIENCE

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

(Graduate Research) Assistant

- Understanding the performance characteristics of CXL.mem systems. Data-driven far memory allocation, prefetching, and replacement policies. Emulating memory disaggregation for data center applications

**Darko Marinov's Lab, University of Illinois at Urbana-Champaign** 07/2021 – 10/2021

(Research Experience for Undergraduate) Remote Program

- Investigating Order dependent Flaky Tests by Dynamic Taint Analysis and fix the underlying concurrent bugs.

**System Lab, ShanghaiTech University** 07/2019 – 06/2020

(Undergraduate Research) Intern

- A2D uses the cost of attacking an input for robustness evaluation and identifies those less robust examples as adversarial since less robust examples are easier to attack.  
Zhao, Zhe, Guangke Chen, Jingyi Wang, **Yiwei Yang**, Fu Song, and Jun Sun. **"Attack as Defense: Characterizing Adversarial Examples using Robustness."** ISSTA21 .
- Establish a team of 16 undergraduate students in total for SCC Competition. Optimize Fortran/C++/Cuda memory/FS MPI/NCCL/Hovorod communication on 2-8 nodes' server and train new members who are interested in system for job-related skills.
  - Yuchen Liu\*, Yixuan Meng\*, **Yiwei Yang\***, Kaiyuan Xu\*, Zijun Xu\*, Tianyuan Wu\*, Shu Yin. **"Critique of "MemXCT: memory-centric X-ray CT reconstruction with massive parallelization" by SCC Team from ShanghaiTech University."** TPDS21 .
  - Guancheng Li\*, Songhui Cao\*, Chuyi Zhao\*, Siyuan Zhang\*, Haotian Jing\*, Yuchen Ji\*, Zecheng Li\*, Jiajun Cheng\*, **Yiwei Yang\***, Shu Yin **"Critique of "A Parallel Framework for Constraint-Based Bayesian Network Learning via Markov Blanket Discovery" by SCC Team from ShanghaiTech University"** TPDS22 .
- Researching MOVE language in Diem currency source code to protect against Arithmetic Overflow, Timestamp Difference.
- Understanding the real access mechanism of Memory Mode Optane Memory and XPBuffer by reverse-engineering methods.

## PORTFOLIOS

**ChocoPy Compiler**

A compiler to LLVM IR and to riscv assembly of python 3.6 subset as ShanghaiTech Compiler class project

**IORing Rust**

IORing Rust for windows, future support monoio

**Cuckoo Hashing GPU**

A Novel Hash method using GPU Implement full two table cuckoo Hash table using CUDA intrinsic.

## 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, Linux perf, eBPF
- **Machine Learning:** familiar with general knowledge of machine & reinforce learning.

## MISCELLANEOUS

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- Interests: Computer Architecture, Storage System, Formal Methods, etc.
- Awards:
  - Lead GeekPie\_HPC *Ranked 2*, SC-SCC21. *Ranked 4*, ISC22.
  - As a member of 0x238e *Best award*, Bitrun, Hang Zhou, 2019.
  - *Second Award*, Shanghai CTF invitation competition, 2019.