Xinchen Jin

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Education

Shanghaitech University   *Shanghai, China*

Undergraduate, Computer Science, School of Information Science and Technology   Sep. 2020 - Jun. 2024
- GRE: 327+4.0, TOEFL: 105
- Cumulative GPA: 3.82/4.0 (9/177) Major GPA: 3.98/4.0

University of California, Berkeley   *Berkeley, California*

GLOBE Exchange Program student   Jan. 2023 - May. 2023
- Courses: CS152/252A Computer Architecture and Engineering (A), CS161 Computer Security (A), CS267 Applications of Parallel Computers(A-)

Research Experience

Reflexive forwarding in Named-Data Network   *Guangzhou, China*

Research assistant, instructed by Prof. Dirk Kutscher, The Hong Kong University of Science and Technology
(Guangzhou)   July. 2023 - Sept. 2023
- Refined and implemented reflexive forwarding using ndn-cxx and NFD (C++)
- Extended the CCNx and NDN protocol to eliminate the problems when using independent Interest-Data exchanges for server-client communication
- Preserved the anonymity of the client when communicating with the server by keeping track of interests in the forwarder
- Set up a testbed in mini-NDN for experiments over multiple forwarders
- Proposed potential improvements for the extension
- Project page: https://dirk-kutscher.info/irtf/reflexive-forwarding-ndn

Computron: Serving Multiple Distributed Deep Learning Models on a Shared GPU Cluster   *Berkeley, California*

Group member, CS267 Application of parallel computers, UC Berkeley   Jan. 2023 - May. 2023
- Designed Computron, a system that uses memory swapping to serve multiple distributed models on a shared GPU cluster
- Implemented a model parallel swapping design that utilizes the CPU-GPU link bandwidth to speed up model parameter transfers
- Realized the function of serving many large models to handle different tasks
- Designed experiments and simulated workloads similar to real world scenarios
- arXiv Link: https://arxiv.org/abs/2306.13835

Python Software Debloat Analysis Project   *Shanghai, China*

Research assistant, instructed by Prof. Yutian Tang, ShanghaiTech University   Mar. 2022 - Aug. 2022
- Deployed call graph analysis on Python packages to debloat software, identifying unused packages
- Analyzed and visualized dependencies of Python packages based on call graph analysis results

Selected Course Projects

Athernet project

CS120 Computer Networks, ShanghaiTech University   Sep. 2022 - Jan. 2023
- Built a network from scratch, and implemented using the JUCE framework and C++
- Used audio as the media, with self-coded modulation and demodulation component
- Implemented high-efficiency system architecture like CSMA/CD that is compatible with current network protocols

CPU branch predictor building

CS152/252A Computer Architecture, UC Berkeley   Mar. 2023 - Apr. 2023
- Implemented classical branch predictors under Chipyard and improved design based on the given task
- Analyzed performance and potential improvements

An End-to-End Encrypted File Sharing System

CS161 Computer Security, UC Berkeley   Apr. 2023 - May. 2023
- Realized a file sharing system using Go language
- Designed the system architecture using encryption and segmenting techniques to ensure security and efficiency

PintOS course project

CS130 Operating System, ShanghaiTech University   Sep. 2022 - Jan. 2023
- Finished Stanford's PintOS project with C Language
- Implemented thread, syscall, virtual memory and file system part

People's willingness to donate blood: an ABM approach

MATH1114 Introduction to Stochastic Simulation Methods and its Application, ShanghaiTech University   Sep. 2022 - Jan. 2023

- Used ABM methods to investigate people's willingness to donate blood
- Wrote programs using Python Mesa package to simulate people and community's activity
- Refined assumptions of the original paper to better model real world blood donators

Awards and Honors

| Dec.2021 | **Honorary Title**: "Merit student" of ShanghaiTech Univerisity (3-7%) |
| Dec.2022 | **Honorary Title**: "Outstanding student" of ShanghaiTech Univerisity (2%) |

Activities

CS100 Introduction to programming   *Shanghai, China*

Teaching assistant, ShanghaiTech University   Mar. 2022 - Jun. 2022

- Prepared tutorial and recitation lessons to students about C/C++
- Answered students' questions on course forum

CS101 Algorithms and data structures   *Shanghai, China*

Teaching assistant, ShanghaiTech University   Sept. 2023 - Now

- Prepared tutorial and recitation lessons to students about algorithms and data structures
- Graded students' homework and quizzes

Volunteer in School Open Day   *Shanghai*

ShanghaiTech University   Dec. 2021

- Maintained examination software service
- Guided candidates and welcome vistors

Social pracice, Gansu, China   *Gansu*

ShanghaiTech University   Jul. 2021

- Researched the tourism industry and Chinese traditional medicinal materials plantation
- Conducted team report to assist local government upgrading local services

Industrial pracice, Zhejiang, China   *Zhejiang*

ShanghaiTech University   Aug. 2022

- Investigated enterprises and laboratories including LOCTEK and Yongjiang Lab
- Authored a report about applications of AI in industry

Skills

Programming languages and software	Matlab, C/C++, Python, RISC-V, Go, LaTeX, Office
Tools and platforms	Nginx, Kubernetes, Bash, Docker, Git
Languages	Chinese(Native), English