YICHENG LIU

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⌂ Home   GitHub

Summary

Shanghai Jiao Tong University 09/2020 – present
- GPA in the past 3 years：90.70/100 （rank 1/61） Shanghai, China

Skills: C/C++ (Microkernel OS develop), Java (Elasticsearch hacking), Rust (CLI tool collection develop)
Interests: Computer system

Relevant Experience

University of Michigan

Summer research in OrderLab, advised by Ryan Huang and mentored by Yigong Hu

Research Topic: Cancellation in distributed system

- Development of auto cancellation system in Java application (Elasticsearch)

Shanghai Jiao Tong University

Intern in Institution of Parallel And Distributed Systems (IPADS), advised by Jinyu Gu

Research Topic: Operating System Security, Container Security, Autopilot System

- Development of an autopilot system based on the micro kernel operating system.
- Development of various sanitizers in the micro kernel operating system, including KASAN, KMSAN, and KCSAN, to enhance system security and stability.
- Engagement in container security research, entailing the design of container security strategies as well as investigation and replication of Common Vulnerabilities and Exposures (CVEs) to verify security measures.

Shanghai Jiao Tong University

Intern in John Hopcroft Center, advised by Guanjie Zheng

Research Topic: Traffic Signal Control, Reinforcement Learning, Traffic Forecasting Model

- Development of a comprehensive traffic simulation system capable of processing large volumes of data and simulating traffic flow at scale.
- Investigation in offline reinforcement learning algorithms for traffic signal control (TSC), which involved investigating and developing new approaches to enhance the efficiency and effectiveness of TSC.

Shanghai Jiao Tong University

PRP participant in Intelligent Computer Architecture Technology, advised by Zefang Yu

Research Topic: Computer Version, Automatic Dataset Collection

- Development of the automatic image dataset collecting method using GTA engine.
- Development of a Human Pose Estimation (HPE) training system that leverage the automatically collected image dataset.

Publications

Conference

Synpose : Large-Scale and Densely Annotated Synthetic Dataset for Human Pose Estimation in Classroom
Zefang Yu; YangCheng Li; **Yicheng Liu**; Ting Liu; Yuzhuo Fu
ICASSP, 2022. [Paper]

CBLab : Scalable Traffic Simulation with Enriched Data Supporting
Chumeng Liang; Zherui Huang; **Yicheng Liu**; Zhanyu Liu; Guanjie Zheng; Hanyuan Shi; Yuhao Du; Fuliang Li; Zhenhui Li
SIGKDD, 2023. [Paper]

Review Services

- 2023 **Review** Conference and Workshop on Neural Information Processing Systems (NIPS)
- 2023 **Review** Knowledge Discovery and Data Mining (KDD)
- 2023 **Review** International Conference on Machine Learning (ICML)
- 2023 **Review** International Joint Conferences on Artificial Intelligence (IJCAI)

Honors (selected)

- 2021-2022 **National Scholarship,** Top performance students in China
- 2021-2022 **The First Prize Scholarship,** Top 1 student of the department in SJTU
- 2021-2022 **Merit Student,** Top performance students in SJTU

Project Portfolio (selected)

Mini Basic

Developer [Code]

A Basic Interpreter. Input basic language code in the left column and the result will be shown in the right one. Currently it **supports PRINT, GOTO, IF ELSE, and mathematical expression**.

Parabox in Shell

Developer [Code]

Inspired by the game Parabox and here is **the cli version of Parabox**, which contains most of the functions of the origin Parabox. Different maps and starting UI are to be finished in the future. Using w, a, s, d to control player (P). There are many different kinds of blocks with different interactions.