FEIYU ZHANG

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EDUCATION

University of Illinois at Urbana-Champaign, Champaign, IL Aug 2021 - May 2024(Expected)
Master of Science in Electrical and Computer Engineering

University of Illinois at Urbana-Champaign, Champaign, IL Sept 2017 - May 2021
Bachelor of Science in Computer Engineering GPA : 3.85

Zhejiang University, Hangzhou, China Sept 2017 - June 2021
Bachelor of Engineering in Electronics and Computer Engineering GPA : 3.92

SKILL SETS

Courses	Data Structures and Algorithms, Operating System, Network, Database, Distributed Systems, Machine Learning, Parallel Programming, Blockchains
Programming	**Python**, **C++**, **Golang**, **Rust**, x86, C#, HTML&CSS, JavaScript
Framework & Tools	**Linux**, **Cuda**, **Pytorch**, **Docker&K8s**, Unity3D, Flask, Git, CI/CD, GCP

WORK EXPERIENCES

Applied Research Engineer Intern **Nvidia**, Remote, USA, May. 2022 - Aug. 2022
- Integrated voice-based **dialogue system** backed by **LLM**,**NLP** and **ASR** working with Nvidia Nemo.
- Implemented **asynchrous** protocol in Omniverse to translate human language to actions in **3D** and **XR**.
- Re-engineered SDK in **Python** for multi-slots, used by teams such as *Deepsearch* and marketing.

Software Engineer Intern **Cloudflare**, Remote, USA, Jun. 2023 - Aug. 2023
- Prototyped partial Colo Disablement service in **Rust** and **Golang**, which reduced possible incidents amount due to network overload by 30%, and helped the infrastructure to be robust, scalable.
- Tested core data model supporting **RESTful APIs** and **Postgresql** addressing backward compatibility.
- Developed codebases using **Docker** and **CI/CD**, and monitored data analytics with **Grafana**.

Graduate Researcher **UIUC**, IL, April 2022 - Present
- Led code switching speech recognition research based on *ESPnet*.
- Researched deep learning models including **RNN-T**, **Bert** and **Transformer**.
- Developed *Stable Diffusion* based Speech to Image Generation with *Wav2Vec* in **Pytorch**.

ACADEMIC PROJECTS

Backend Project: Distributed System UIUC, IL, Jan. 2022 - May. 2022
- Implemented a Leader Election and Log Consensus system based on the *Raft* paper using **Golang**.
- Developed a distributed transactions system ensureing **ACID** property on distributed objects.

Full Stack Project: Tornado Music Database and Website UIUC, IL, Aug. 2021 - Dec. 2021
- Initiated a project that helps clients to discover 10,000+ music from 5+ music platforms.
- Designed a music database on **GCP** in **MySql** with advanced query search and index.
- Developed a website's backend and frontend using **HTML/CSS, Flask,JavaScript**.

GPU Project: CUDA for LeNet-5 UIUC, IL, Sept. 2020 - Dec. 2020
- Optimized GPU Convolution with **CUDA** kernel tricks including shared memory, unroll loop that reduced GPUTime by 97% comparing with no optimization baseline.
- Analyzed GPU performance on both system(*Nsight-Systems*) and kernel(*Nsight-Compute*) levels.

Computer Network Project: TCP protocol UIUC, IL, Aug. 2020 - Dec. 2020
- Developed a TCP protocol based on UDP sendto() and recvfrom() using **C** with speed up to 40MB/s.
- Implemented realible transmission, fast recovery and congestion control.

Operating System Project: Unix-like OS UIUC, IL, Nov. 2019 - Dec. 2019
- Delivered a Unix like OS kernel from scratch in **C** and **x86**, with features including interrupts, multiple terminals, paging, virtual memory, file systems, user/kernel mode, VGA drivers.

TEACHING ASSISTANT

University of Illinois at Urbana-Champaign, Champaign, IL Aug 2021 - May 2023
Senior Design FA21, Artificial Intelligence SP22&SP23, Computer Network FA22.