ZHU JUNHAO

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OBJECTIVE

I am eager to pursue a Master's degree in Computer Science, with a specific focus on distributed systems and computer network. While machine learning is not my primary area of interest, I am keen on conducting research that enhances the performance and usability of model training and inference, aiming to contribute innovative solutions that advance the field.

EDUCATION

Bachelor's Degree in Computer Science   2021,3 - Ongoing
Yonsei University, South Korea GPA: 3.71/4.3, Major Ranking 49/177 (by the end of 7th semester)

LANGUAGE

IELTS Listening/Speaking/Reading/Writing: 7.5/6.5/7.0/6.5 (overall 7.0)

KNOWLEDGE and SKILL   🟩 Familiar ⬛ Basic 🟥 Limited ⬜ Roughly understand

General Coding	Rust, Java, C/C++, Go, Javascript
Distributed System	Map Reduce, Raft, Zab (Zookeeper), RPC, Transaction
Low Level Concurrency	Mutex, Read-Write lock, Spin Lock, Conditional Variable, Atomics and Memory Ordering, SIMD (avx2 in specific)
Network	Socket, TCP/IP, Routing Algorithms, DNS, ARP, DHCP, Wireshark
Security	AES, RSA, Diffie Hellman, Linux Namespace, ROP, FLUSH RELOAD, PRIME PROBE
Rust Ecosystem	Tokio, Rayon, Iced, Tonic (gRPC), etc.
Cloud Native	Docker, Kubernetes
Cloud Operation	AWS CLI, Bash/Fish Script, Tmux, EC2, EKS, S3, Route53
GPU	CUDA programming and optimization techniques
Web Frontend (Js)	React, Redux
Web Backend (Java)	Spring Boot, Spring Data JPA, Spring Security, Spring cloud Eureka
Web Backend (Rust)	Axum, Diesel
Middlewares	Kafka, ZeroMQ, Nginx, Redis, Flink
Editing	LaTeX, NeoVim

INTERESTED FIELD OF STUDY

Distributed System	Multiple computers communicate over network to perform coherent tasks Parallelism, Fault Tolerance, Synchronization, Security Applications include but not limited to: Cloud Computing, Distributed FS/DB/ML, Big Data, Container Orchestration
Computer Network	Infrastructure that provides services to distributed applications Software-Defined Network, Internet of Things, Network Protocols

SIDE PROJECTS (clickable links colored in BLUE)

jhchat (1 year ago)	An end-to-end encrypted chat server and client with customized protocol codec, logging, and key-exchange. Written before taking security course thus Diffie-Hellman wasn't used.
jhplot (1 year ago)	GUI wrapper for plotting coordinated graphs
jhremote, jhscripts	Bash/Fish scripts for installing softwares and wrapping tools like AWS CLI, ffmpeg, whisper, latexmk.
jhdns, jhautomata	Implementation of concepts from coursework
Others & Upcoming	Please refer to my github account

INTERNSHIP/TRAININGS

Yonsei ELC Lab   2023/12/27 - 2024/3/6
Professor: Bernd Burgstaller (ORCID)   Supervisor: Dr. Shinhyung Yang (ORCID)

- a continuation of research aimed at enhancing the performance of stream processing engines.

- consulted several papers, namely Hazelcast Jet, SABER, BriskStream, StreamBox, Benchmarking Streaming Computation Engines, Analyzing Efficient Stream Processing on Modern Hardware

- initiated an incomplete survey, I can share it upon approval from supervisor if needed

- contributed to a hybrid Java/C++ codebase for the paper Cloud Profiler as well as benchmark scripts. In specific, I parallelized the data generator, visualized the progress, adjusted operator fussion, wrote bash scripts for automation, migrated versions and addressed breaking changes, assisted my supervisor with debugging barrier server. Gitlab commits are available upon approval if needed

I am applying for a 4-month Computer Science lab internship in the next semester   2024/9/TBD - 2024/12/TBD