JUNHAO ZHU

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OBJECTIVE

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

EDUCATION

Bachelor's Degree in Computer Science **2021,3 - Ongoing**
Yonsei University, South Korea **GPA: 3.71/4.3, 94.9% (by the end of 7th semester)**
Total Scholarship Awarded 15,016,000 KRW
Merit-based each year (Million Korean Won): 2021-3.07M, 2022-4.66M, 2023-5.44M, 2024-1.55M

INTERESTED FIELD OF STUDY

Distributed Systems	Parallelism, Fault Tolerance, Synchronization, Cloud Computing, Block Chain Distributed FileSystem/Database/MachineLearning, Big Data, Container Orchestration
Computer Network	Software-Defined Network, Internet of Things, Network Protocols, Routing Algorithms
Software Engineering	Design Patterns, Quality Assurance, Maintenance, CI/CD, Formal Verification

LANGUAGE SKILL

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

EXTRACURRICULAR KNOWLEDGE/SKILL

Familiar Basic Limited Roughly understand

Distributed System	Map Reduce, Raft, Zookeeper, RPC, Transaction, Fork Consistency
Low Level Concurrency	Mutex/Read-Write/Spin lock, Conditional Variable, Atomics and Memory Ordering , SIMD (avx2)
Rust Ecosystem	Tokio, Rayon, Iced, Tonic (gRPC), Axum, Diesel, Clap, etc.
Java Ecosystem	Spring Boot, Spring Data JPA, Mybatis, Spring Security, Spring cloud Eureka, etc.
Cloud Native	Docker, Kubernetes
Cloud Operation	AWS CLI, Bash/Fish Script, Tmux, EC2, EKS, S3, Route53
Middlewares	Kafka, ZeroMQ, Nginx, Redis, Flink
Editing	LaTeX, NeoVim

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 far from perfect.
jhplot (1 year ago)	GUI wrapper for plotting coordinated graphs
jhremote, jhscripts	Bash/Fish scripts to automate tools like AWS CLI, ffmpeg, whisper, latexmk.
jhdns, jhautomata	Implementation of concepts from coursework
nvim, jhconfig	My personal configurations

EXTRACURRICULAR STUDY

k8s-the-hard-way-aws	Manually setting up etcd, containerd, kubernetes control plane, and worker nodes on AWS EC2 cluster with customized VPC
MIT 6.824	Distributed systems open course series provided by MIT
KodeKloud (ongoing)	A reputable online education platform famous for its CKA certificate courses I am following kubernetes and DevOps learning path
udemy (ongoing)	I have subscribed to their Apache Flink course

INTERNSHIPS

Yonsei ELC Lab **Topic: Stream Processing Engines (continuation of 4-month Capstone Course)** **2023/1 - 2024/3**
Professor: Bernd Burgstaller (ORCID) **Supervisor: Dr. Shinhyung Yang (ORCID)**

- consulted several papers to initiate an incomplete survey, namely Hazelcast Jet, SABER, BriskStream, StreamBox, Benchmarking Streaming Computation Engines, Analyzing Efficient Stream Processing on Modern Hardware
- contributed to a hybrid Java/C++ codebase for the paper Cloud Profiler as well as another benchmark repository. In specific, I parallelized the data deserializer, visualized progress, adjusted operator fussion, wrote bash scripts for automation, migrated versions and addressed breaking changes, assisted my supervisor with debugging barrier server.

Yonsei ELC Lab **Topic: Block Chain Testing Support** **2024/9 - TBD**
Professor: Bernd Burgstaller (ORCID)