JUNHAO ZHU

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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 (2 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 (2 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
udemy (ongoing)	I have subscribed to their Apache Flink course

INTERNSHIPS

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

- initiate an incomplete survey, consulted several papers, 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 (Ongoing)	2024/9 - TBD
Professor: Bernd Burgstaller (ORCID)		

- working on codebase adjacent to the paper An Off-The-Chain Execution Environment for Scalable Testing and Profiling of Smart Contracts that aims to verify the correctness of ethereum bytecode decompiler

- migrated customized decompiled contract interpreter to higher Geth verison

- debugging memory tracking upon external call (ongoing)