

EDUCATION

•University of Pennsylvania

Aug. 2022 – May 2025

Dual degree: M.S.E. in Electrical Engineering / M.S.E. in Computer and Information Science, GPA: 3.7

•Central South University

Sept. 2018 – Jun. 2022

B.Eng. in The Internet of Things Engineering, School of Computer Science and Engineering, GPA: 3.77

EXPERIENCE

•Weride

Jul. 2025 - Present

Software Engineer

- Maintain the planning simulation system and the simulation scheduling system
- Analyze incidents with VLMs and decision trees

•Weride

June. 2024 - Dec. 2024

Software Engineer Intern

- Developed a simulation launcher with microservices, enabling continuous evaluation and testing of self-driving models
- Increased bag decoding throughput by 40%, optimized CPU utilization by 229%, and reduced memory usage by 42%
- Analyzed system performance and addressed over 50 stability issues reported by the Sentry monitoring system

•Alibaba Cloud

Jun. 2023 - Sept. 2023

Software Engineering Intern

- Designed an **AIOps-driven alert system** to help detect anomalies and monitor the distributed storage service
- Created an anomaly detection service with an ensemble model of over 10 **machine-learning** models, e.g. LOF
- Integrated the dashboard for data visualization, model configuration, alert management, and message delivery

PROJECTS

•Google-style Search Engine: A distributed system



- Crafted an HTTP1.1 implementation according to RF-2616 to provide the communication of the distributed system
- Created a **Distributed Key-Value Storage System** with a Master-Slave architecture and a **Distributed Hash Table**
- Emulated **Spark** to produce a distributed data analytics framework based on the created distributed key-value storage
- Deployed the search engine on tens of **AWS EC2** instances to actually crawl 100,000 pages, store the pages in the created distributed key-value storage system, compute the **PageRank** and **TF-IDF** using our Spark, provide a UI for users to search, and return sorted pages given the input words using the combination of PageRank and TF-IDF

•Raft: Consensus Algorithm Realization



- Implemented Raft to achieve linearizability and consensus among **replicated state machines** in a distributed system
- Coded *RequestVote RPC* for **leader election** and *AppendEntries RPC* to **replicate log entries** and maintain authority
- Built **log compaction** with snapshotting and *InstallSnapshot RPC* to compress the log and bring followers up-to-date

•Chord: A Decentralized Distributed Hash Table



- Implemented Chord, a decentralized lookup protocol that efficiently maps keys onto nodes, enabling seamless operation as nodes join or leave, and demonstrating scalability through logarithmic communication costs and node state.
- Designed an event-driven schema consisting of asynchronous I/O function calls and a callback mechanism.

•JOS: Operating System Implementation



- Engineered an OS with physical and virtual memory management, process management, preemptive multitasking, round-robin scheduler, inter-process communication, interrupt, file system, shell, and network interface card driver

•Thesis Quality Prediction

- Employed **BERT** for encoding and **LSTM** for predicting to predict essay quality given users' writing behaviors

•Transformer's Positional Encoding Analysis



- Prove that in Transformer, the addition of positional encoding and word embedding is a specific case of concatenation

•BinaryConnect: Quantize Neural Network



- Quantize Neural Network by binarizing the weights to 1 and 0 to accelerate the training and save memory

•Web Application



- Developed a course comments web using **Django** to provide a **RESTful** interface and deployed it on the AWS server
- Updated the web application with Java, **Spring Boot**, TypeScript, and **Angular** for better GUI

ACHIEVEMENTS

Patent A Wireless Weighing Device and Method for Weighing-type Vending Machine. Patent No. 202111412755.9, China.

Software Copyright Software for Reading Pointer-Type Water Meters. Software Copyright, 2021SR1099107, China.

Award 1st out of 150 teams in the 2021 Hunan Collegiate Programming Contest.

Award Meritorious Winner in 2021 MCM/ICM Mathematical Contest in Modeling.

TECHNICAL SKILLS AND INTERESTS

Languages: Python, Java, Go, C++, C, Bash, SQL, Matlab **Tools:** Git, ROS, Kubernetes, Bazel, Helm Charts

Frameworks: Pytorch, Transformers, Numpy, Pandas, Scikit-learn, Matplotlib, Flask, SQLAlchemy, Django, Vue

Areas of Interest: Distributed Systems, Machine Learning, Robotics