CHUN-MING(Jimmy) LIN

0912-707-551 linkedin.com/in/chun-ming-lin https://jimmy-0.github.io/Jimmy_Lin/ cminglin248@gmail.com

Education

University of Illinois at Urbana-Champaign (GPA: 3.6/4.0) Chicago, IL
Master of Engineering (M.Eng.) - Electrical and Computer Engineering Sep. 2021-Dec. 2022

- Coursework: Distributed Systems, Parallel Programming, Blockchains, Reliability of cloud-scale computing, Database System, Wireless Network

National Taiwan Ocean University (GPA: 3.6/4.0) Keelung, Taiwan
Bachelor of Science (B.S.) - Marine Engineering Sep. 2016-Jun. 2020

Technical Skills

- Languages: **Python**, Rust, MySQL, Solidity, React, Node.js, CUDA, C++
- Developer Tools: Git**, Kubernetes**, Linux
- Frameworks: Docker, Redis, Neo4j, **AWS**
- Certificate: AWS Certified Cloud Practitioner, AWS Certified Solution Architect Associate – In Progress

Projects

RAG (Retrieve and Generate) System | **FastAPI, AWS Lambda, ChromaDB, LangChain** June 2024

- Implemented a robust and flexible RAG application using FastAPI for API endpoints and AWS Lambda for asynchronous processing.
- Achieved efficient and scalable query management using Amazon DynamoDB for persistent storage and state tracking of query metadata.
- Enhanced document search capabilities using ChromaDB integration with PyPDF for document loading and LangChain for text splitting and embedding functions, supporting high-accuracy information retrieval.

Microservice system |**Docker, Kubernetes, RabbitMQ** May 2023

- Deployed the gateway, authentication_service, convert_service, and notification_service in a Kubernetes private cluster with at least 2 replications for high availability.
- Achieved asynchronous communication by utilizing RabbitMQ as the message queue.
- Implemented a notification_service that consumes messages from the queue and sends email notifications to clients.

CoruscantGraph*-tracing ecosystem for span reliability inference*| **Rust, Python** February 2022

- Accomplished modeling system reliability dependence in micro-scale by using tracing spans and subscribers
- Performed fault injection experiments on Raft protocol to analyze the dependence of system reliability in micro-scale
- Visualized the probability between each component using python

Chivago *– A hotel management system* | **React, Node.js, MySQL, AWS** December 2022

- Optimized database queries using MySQL triggers and procedures for enhanced query efficiency
- Implemented a RESTful API with CRUD functions using Node.js, integrated modules and validated interactions across modules through the use of observability tools
- Deployed and configured the project on AWS Elastic Beanstalk while incorporating observability principles

Raft in Python | **Python** September 2021

- Distributed a state machine across a cluster, ensuring that each node agrees with the same state transitions
- Implemented Leader Election, Log Replication, and Log Persistence to enhance fault tolerance in the cluster
- Troubleshot concurrency issues in a simulated distributed system and reduced system fail rate from 0.1% to 0.01% through the use of observability tools

Distributed Key-Value Database | **Python** September 2021

- Implemented a distributed key-value database supporting simple SQL sentences for CRUD operations
- Implemented RAFT algorithm for leader election and log replication to achieve consensus among servers
- Ensured ACID properties through Two-Phase Lock and created a coordinator for Deadlock resolution, all while incorporating observability principles

CNN Inference Optimization | **CUDA** September 2021

- Demonstrated command of CUDA and designed optimized approach to be utilized on CNN
- Implemented the GPU optimization techniques, such as kernel fusion and tiled shared memory convolution
- Obtained practical experience in analyzing and fine-tuning CUDA kernels with profiling tools

Experience

American Club Taipei Taipei, Taiwan
Software Developer. July 2023

- Maintain member data flow, including activities log, transactions, and membership data using C#, MySQL.
- Design and develop plugin applications to optimize the ERP system using Python Flask and JavaScript.
- Coordinate frontend and backend development teams to rebuild the company website, including new UX/UI design and backend integration.

Achievement

Undergrad achievement September 2016 - June 2020

- Academic Excellence Award