

Che-Kuang (Ken) Chu

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EDUCATION

University of Illinois Urbana-Champaign (UIUC)

Champaign, IL

M.Eng. in Electrical and Computer Engineering

Aug. 2023 – Dec. 2024 (Expected)

- Selected Courses: Distributed Systems, Applied Parallel Programming, Computer Security

National Taiwan University (NTU)

Taipei, Taiwan

B.S. in Electrical Engineering (Overall GPA: 3.9/4.0, CS-Related GPA: 4.0/4.0)

Sept. 2018 – Jun. 2022

- Teaching Assistant for Web Programming (Fall 2021) - Instructor: Prof. Chung-Yang Huang
- Selected Courses: Network Administration and System Administration, Computer Security, Operating Systems, Algorithms, Data Structure, Machine Learning, Software Engineering Design

WORK EXPERIENCE

Cloud Backend Developer Intern

Apr. 2022 – Dec. 2022

Synology Inc.

New Taipei City, Taiwan

- Developed a thread-safe rate limiter to efficiently manage network bandwidth resources, ensuring optimal backup operations for the entire disk storage system.
- Developed a full-stack application to monitor OpenStack Swift storage usage, utilizing Grafana for data visualization, and successfully deployed the application on Kubernetes.
- Integrated ArgoCD into the existing GitLab CI/CD pipelines, significantly streamlining deployment processes with a 80% reduction in steps.

Co-Founder & Software Engineer

Sept. 2020 – Nov. 2021

Cardbo Tech.

Taipei, Taiwan

- Designed and developed two web applications using React, serving a user base of over 10,000 individuals.
- Developed internal data collection and analysis tools, deploying them on the Google Cloud Platform.
- Created a streamlined CI/CD pipeline by leveraging GitHub Actions to automate the deployment process.

OPEN SOURCE

Contributor, Apache Submarine

A unified Machine Learning Platform to allow data scientists to create end-to-end machine learning workflows. | [Github](#)

- Created Submarine Operator, a specialized Kubernetes Operator facilitating seamless multi-tenancy functionality.
- Implemented comprehensive end-to-end tests for submarine-operator, taking inspiration from spark-on-k8s-operator.
- Contributed to the community growth of 10+ potential individuals and led a group to develop Submarine-Operator.

PROJECTS

Distributed File System and MapReduce Engine | Distributed Systems, Golang, gRPC

Oct. 2023 – Dec. 2023

A distributed system operating across multiple instances to facilitate files and MapReduce operations. | [Github](#)

- Designed distributed algorithms to facilitate leader elections, scheduling, file replications, and ensure fault tolerance.
- Improved file transmission efficiency by implementing concurrent file uploads using Go routines, achieving the upload of a 12GB file to the system in just 30 seconds.
- Developed a MapReduce Engine with SQL query support, surpassing Hadoop performance on targeted files by 30%.

LightDance-Editor | Leadership, React, NodeJS, GraphQL, MongoDB, Redis, Docker

Nov. 2020 – Apr. 2022

A Collaborative Choreography Platform and Remote Control System | [Github](#)

- Architected a system comprising 5 microservices that communicate seamlessly through HTTP requests.
- Implemented a state management algorithm, delivering an impressive 10x boost in operation speed.
- Implemented a NTP time algorithm, ensuring device time synchronization within an 30-millisecond margin.
- Led and managed a 13-member team throughout the project's development and execution.

TECHNICAL SKILLS

Languages: C/C++, Python, JavaScript, TypeScript, Java, Golang, Shell Script, SQL, Verilog

Web Programming: HTML/CSS, React, Vue, NodeJS, FastAPI, Gin, Restful API, GraphQL

Database: Google Bigtable, MongoDB, MySQL, PostgreSQL, TiDB, Redis, Redis Cluster

Tools: Linux, Git, Nginx, Docker, Kubernetes, Traefik, Helm, Github Actions, Hadoop