

# Kang Hong

forgoes.notion.site | github.com/forgoes  
+1 (437) 818-2845 | Waterloo, ON | hongkang@hongkang.name

## EDUCATION

### LAKEHEAD UNIVERSITY

MEng in Electrical and Computer Engineering

May 2025 | Thunder Bay, ON

#### Relevant Coursework:

Computer Networks

Deep Learning Theory & Models

Big Data Machine Learning

Parallel Programming

Embedded Internet of Things

Applied Algebra & Probability

#### Projects:

##### Parallelizing Transformer

##### Self-Attention by CUDA

[github.com/mylakehead/parallel](https://github.com/mylakehead/parallel)

Parallel Programming C CUDA MPI

Transformer Self-attention AI GPU

##### Packet Scheduling Simulation

[github.com/mylakehead/computer-networks](https://github.com/mylakehead/computer-networks)

Computer Networks C++ Queuing System

FIFO SPQ WFQ

##### EEG-based Emotion Recognition

[github.com/mylakehead/eeg](https://github.com/mylakehead/eeg)

Deep Learning Big Data Machine Learning

Python Pytorch AI CNN Transformer

##### Vehicle Theft Detection

[github.com/mylakehead/deep-learning](https://github.com/mylakehead/deep-learning)

Deep Learning Python Pytorch AI

Spatial & Temporal Attention

##### Smart Home Energy Trading

<https://github.com/mylakehead/smart->

Go Python TypeScript Nextjs AI

Block Chain MetaMask Smart Contract

## JIANGSU UNIVERSITY

Bachelor of Computer Science

June 2008 | Jiangsu, China

## PROFESSIONAL PROFILE

Engineer with over a decade of experience in system architecture, specializing in the design and development of distributed systems — including server, IoT, big data, and monitoring infrastructures. Recently strengthened AI capabilities through a Master's program at Lakehead University, focusing on data analytics and deep learning. Dedicated to continuous improvement and engineering excellence.

## CORE COMPETENCIES

Cloud and Big Data Design and Development

IoT Infrastructure Design and Development

Monitoring System Design and Development

Data Analytics and Big Data Processing

Machine Learning and Deep Learning

## EXPERIENCE

### GOAT GROUP | SENIOR SOFTWARE ENGINEER

November 2021 – August 2023 | Shanghai, China

- Promoted the successful landing of the business in China, including designing, implementing and optimizing the architecture of backend services, providing solutions, documentation and coding details.
- Led the learning, deploying and integrating the distributed database Couchbase, including sharing knowledge and providing maintenance solutions and guides.
- Undertook the development of global and domestic projects such as SMS service, payment service and front-end pages by manipulating multiple programming languages, such as Go, Ruby, Python and JavaScript.
- Shared expertise in architecture design, monitoring, and distributed systems. Authored and contributed a custom Go logging library — [logging](#) — which demonstrated superior performance in [benchmark](#) tests compared to other open-source options.

### TCL | SENIOR SOFTWARE ENGINEER

December 2019 – April 2021 | Shanghai, China

- Designed and developed the cluster of MQTT Broker, the core component of IoT infrastructures, based on P2P architecture and written by Go. On a single node (16 cores and 64G memory), the broker can accommodate more than 1,000,000 connections and transmit more than 400,000 messages per second. The three-node cluster can accept over 3,000,000 connections and send over 100,000 messages per second — the modified open-source version of the broker [Bifrost](#).
- Designed and developed a cloud-native monitoring system based on AWS Serverless Lambda and Java Spring Cloud services. Responsibilities included writing documentation, and sharing knowledge on the complete event pipeline — including event specification, collection, recording, caching, transmission, storage, and visualization in distributed systems. Also developed a Python-based [logging](#) library for structured event collection, which was widely adopted within the team. The project received the First Prize for Innovation and the First Prize for Best Presentation at the TCL 2020 Open Day.

## TECHNICAL SKILLS

### DISTRIBUTED SYSTEMS

CAP, Raft, MPI, CUDA  
Consistent Hashing, GRPC, QOS  
Kafka, RabbitMQ, Couchbase  
Redis, ETCD

### PROGRAMMING LANGUAGES

Python, Go, C/C++  
JavaScript/TS, Java  
Ruby, R, Rust

### IOT

MQTT, MQTT Broker, AWS IoT Core

### MONITORING

Grafana, FileBeat, ClickHouse  
OpenTelemetry, OpenTracing

### WEB

WebSocket, HTML5, CSS3, Webpack

### DATABASE

MySQL, PostgreSQL, Elasticsearch  
InfluxDB, Couchbase

### AI/ML

PyTorch, TensorFlow, Transformer  
CNN, LSTM, RNN, GNN  
Spatio-Temporal Attention

### OTHERS

Kong, Docker, K8s  
AWS Lambda/Kinesis, Blockchain  
MetaMask

- Responsible for service maintenance, including the local [cache](#) approach for reducing the frequency of Redis requests and I/O time costs, optimizing GRPC client-side load balancing, layering services, version management and designing Git workflow.
- Participated in the design and development of IoT4.0 by manipulating multiple programming languages, such as Go, Java, Python and JavaScript.

### HUAYUN DATA GROUP | FULL STACK ENGINEER

September 2017 – March 2019 | Shanghai, China

- Responsible for developing the private cloud platform, including the computing and bare metal modular, providing solutions to optimize the backend and frontend performance.
- Designed and developed the message-pushing system by the mechanism of WebSocket and integrated the data stream with React and Redux.
- Led the learning of Go programming language and shared the knowledge with workmates.

### QIUBAOTONG CO., LTD. | FULL STACK ENGINEER

July 2015 – May 2017 | Shanghai, China

- Responsible for developing the online pre-ordered delivery system for golf bags, including backend services and frontend pages.

### INOVANCE | SOFTWARE DEVELOPMENT ENGINEER

December 2013 – February 2015 | Nanjing, China

- Designed and developed multiple Linux local applications for visual inspection and mechanical controlling, including collecting images from the industrial camera, loading the vision algorithm module, and communicating with PLC after calculation.
- Optimized the real-time displaying of images and visual interaction on canvas.

### MRIT CO., LTD. | SOFTWARE DEVELOPMENT ENGINEER

October 2010 – July 2013 | Zhenjiang, China

- Responsible for developing the control system for the 10,000-tonnage dredger, including rendering the ship's mechanical status and communicating with the PLC and other nodes of the system.

## PERSONAL ATTRIBUTES

I approach work with a rational and analytical mindset, focusing on solving problems systematically while minimizing bias. Open to diverse perspectives and challenges, I value collaboration and continuously strive for self-improvement. Outside of work, I enjoy exploring nature, basking in sunlight, and observing quiet moments that inspire balance and creativity.