

# HAI-LIANG HAL WANG

Technical architect focused on delivering scalable and reliable solutions that bring strategic vision to reality. Senior backend developer with specialty in distributed systems and various algorithms. Go expert, open source author and contributor of dozens of projects

## EXPERIENCE

### Lead Developer of AI Infrastructure

#### Ninety Percent of Everything

📍 London

- Implemented data cleansing Kafka stream service based on JEXL expression filter
- Solved data quality issues with Unscented Kalman Filter
- Built service chassis for data science Python models and streaming services
- Verified data science service deployment by visualization with Elastic Search and Grafana dashboard

### Lead Developer of Charteirng

#### Ninety Percent of Everything

📍 London

- Made critical technical decisions and built backend services from scratch for Chartering product
- Maritime voyage estimator (TCE and time charter) for liquid and dry cargo vessels
- Geometric algorithms: shortest path and geo-fencing in polygonal domain on sphere
- Name lookup algorithm: word-wise prefix search based on suffix array

### Senior Developer

#### StorageOS

📍 London

- Helped to bring StorageOS to v1.0.0, which is enterprise persistent storage for containers, supporting fast orchestration and high availability
- Refactored licensing API based on JWT and wrote product documentation for licensing
- Fixed a panic issue in logrus (PR #857)
- Troubleshooted goroutine and memory leaks

### Senior Architect at Tik Tok/Musical.ly

#### ByteDance

📍 Shanghai

- Optimized Discovery Page by porting it from Python to Go: latency from 839ms to 187ms and error rate from 1.3% to 0.0004%
- Designed and implemented I18N service, efficient server and client that provide every other service multilingual templates
- Wrote New Backend Engineer Orientation Wiki Portal, helping new employees cope with their work challenges

### Backend Lead of R&D

#### Appcoach

📍 Shanghai

- Led the development of Appcoach Market: a multi-regional, horizontally scalable and fault tolerant ad network
- Built API with high availability, high throughput and low latency (latency < 10ms and QPS > 2K per core)
- Implemented our own distributed messaging system (h12.io/sej) for fine-grained control over latency and reliability

## CONTACT INFO

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🌐 h12.io

🔗 github.com/h12w

in hal-wang

## SKILLS

### System Architecting

Scalable System Design

Reliability Engineering

Performance Optimization

### Writing Clean Code

Requirements Analysis

Unit Testing

Refactoring

### Languages

Go

Python

Java

C#

C

SQL

### Microservices

gRPC/GraphQL/Thrift

Docker/Kubernetes

Consul/etcd

### Cloud Computing

Amazon Web Services

EC2, S3, ELB, RDS MySQL

CloudFront, Route53

### Realtime Analytics

Kafka

Grafana

MongoDB

BadgerDB

h12.io/sej

### Parser & Generator

h12.io/gombi

2015  
|  
2011

## PhD Student of Systems Engineering

Xi'an Jiaotong University

📍 Xi'an

- Designed a concurrent, simple and extensible web scraping framework (h12.io/getgo) to collect data from online social networks
- Developed a SOCKS client package (h12.io/socks) for parallel web crawling, which has gained over 200 stars on Github
- Published *Exploring the Efficiency and Mechanism of Whistleblowing System on Social Networking Site* on IEEE ICC 2014 Conference

2011  
|  
2009

## Software Engineer at SPSS Data Collection

IBM

📍 Xi'an

- Rewrote visual filter editor of survey reporting with recursive descendant parser and functional pattern matching

2009  
|  
2006

## Software Engineer at Wafer Testing Team

Qimonda

📍 Xi'an

- Developed testing system for DRAM wafer in C++ and assembly

h12.io/ua  
h12.io/xsd  
h12.io/html-query  
h12.io/json-schema  
h12.io/schemata

## Web Technologies

HTML  
CSS/SASS  
JavaScript/React  
Markdown



## OPEN SOURCE

2018

### Run

h12.io/run

- mini-framework for graceful goroutine orchestration
- goroutine pool and leak prevention, throttle and logging

2017  
|  
2015

### json-schema

h12.io/json-schema

- a generator from JSON Schema specification to Go struct

2017  
|  
2014

### GSpec

h12.io/gspec

- An expressive, concurrent and extensible Go test framework

2015

### Aliyun-oss-go-sdk

github.com/aliyun-beta/aliyun-oss-go-sdk

- Winner in the contest for developing Alibaba Cloud OSS Go SDK

2014

### Gombi

h12.io/gombi

- combinator-style scanner and parser in Go
- DFA scanner for Go syntax is 50% faster than the official package



## EDUCATION

2007  
|  
2004

## Master of Science in Systems Engineering

Xi'an Jiaotong University

- MS Thesis: *An Efficient Approach to Spam Filtering and its Implementation in Email System*

2004  
|  
2000

## Bachelor of Science in Information Engineering

Xi'an Jiaotong University

- Won First Award of the National Undergraduate Electronic Design Contest