

HAI-LIANG HAL WANG

Results-driven Technical Architect committed to delivering scalable and reliable solutions that bring strategic objectives into tangible outcomes. Specialising in distributed systems and diverse algorithms. Go expert, open-source author and contributor to a variety of projects

EXPERIENCE

- Present
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Apr 2022

● **Staff Engineer**
InfoSum Ltd 📍 London

 - Boosted normalizer performance by 50%, optimizing for multi-core CPU utilization
 - Designed and implemented a distributed multi-instance normalizer for enhanced scalability
 - Engineered an event-driven job scheduler using Kafka messaging and Postgres state machines
 - Adapted the Parquet format for dynamic parsing of static schemas in normalization tasks
- Apr 2022
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Sep 2020

● **Principal Engineer**
Ninety Percent of Everything 📍 London

 - Built a global weather service on top of 2TB grib2 files per year
 - Re-architected data aggregation pipeline for high-frequency vessel data
 - Designed a Go package for Kafka streaming applications with high scalability, throughput and robustness
- Sep 2020
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Dec 2018

● **Lead Developer**
Ninety Percent of Everything 📍 London

 - Solved data quality issues with Unscented Kalman Filter
 - 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
- Oct 2018
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Sept 2018

● **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
 - Fixed a panic issue in logrus (PR #857)
 - Troubleshoot goroutine and memory leaks
- Aug 2018
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Mar 2018

● **Senior Architect at Tik Tok**
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
- 2018
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2015

● **Backend Lead of R&D**
Appcoach 📍 Shanghai

 - Led the development of Appcoach Market: a multi-regional, horizontally scalable and fault tolerant ad network

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
SQL

Microservices
gRPC/GraphQL/Thrift
Docker/Kubernetes
etcd/Consul

Realtime Analytics
Kafka
Grafana
MongoDB
Cassandra
BadgerDB
h12.io/sej

Parser & Generator
h12.io/gombi
h12.io/ua
h12.io/xsd
h12.io/html-query
h12.io/json-schema

• Built API with high availability, high throughput and low latency (latency < 10ms and QPS > 2K per core)

- 2015
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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
 - Published *Exploring the Efficiency and Mechanism of Whistleblowing System on Social Networking Site* on IEEE ICC 2014 Conference
- 2011
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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
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2006 ● **Software Engineer at Wafer Testing Team**
Qimonda 📍 Xi'an
 - Developed testing system for DRAM wafer in C++ and assembly

OPEN SOURCE

- present
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2018 ● **Run**
h12.io/run
 - mini-framework for graceful goroutine orchestration
 - goroutine pool and leak prevention, throttle and logging
- present
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2012 ● **Socks**
h12.io/socks
 - SOCKS protocol client package with over 470 stars on Github
- 2017
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2015 ● **json-schema**
h12.io/json-schema
 - a generator from JSON Schema specification to Go struct
- 2017
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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

EDUCATION

- 2007
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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
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2000 ● **Bachelor of Science in Information Engineering**
Xi'an Jiaotong University
 - Won First Award of the National Undergraduate Electronic Design Contest

h12.io/schemata

Cloud Computing

Amazon Web Services
EC2, S3, ELB
PostgreSQL, MySQL

Web Technologies

HTML
CSS/SASS
JavaScript/React
Markdown