

Alistair Ong

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Eligible for the **H1B1-Singapore visa**, which has a separate quota from the limited H1B pool

EDUCATION

NATIONAL UNIVERSITY OF SINGAPORE

BComp in Computer Science (Honours)

University Scholars Programme

Grad. Dec 2020 | Singapore

SKILLS

LANGUAGES

Experienced:

Go • Java • C++

Python • Typescript • SQL

FRAMEWORKS AND TOOLS

HDFS • Elasticsearch • Scylla

Redis • gRPC • MySQL • Kafka

Prometheus • Grafana •

Docker • Kubernetes • React

COURSEWORK

UNDERGRADUATE

Computer Networks

Operating Systems

Software Engineering

Artificial Intelligence

Algorithms and Complexity

AWARDS

2018	USP Honour Roll
2012	Standard Chartered Most Creative Apprentice
2010	Edusave Scholarships for Integrated Programme Schools (ESIP)

LEADERSHIP

2019	Peer Mentor
	NUS USP Computing
2017	Vice Project Director
	SoC Sports Camp 2018
2017	Vice Captain
	NUS USP Badminton
2017	Orientation Group Leader
	University Scholars Club

EXPERIENCE

TIKTOK / BYTEDANCE | SOFTWARE ENGINEER, BACKEND, HDFS

Nov 2022 – Present | Singapore, SG

- Developer in the Hadoop Distributed File System (HDFS) team, which **manages upwards of 40EB of data**, with a focus on high availability and I/O optimization.
We serve as the primary storage for multiple Applied Machine Learning, Data and TikTok E-Commerce teams globally.
- Core developer of the Cold Storage product with 100k nodes**, (made using Intel ISA-L erasure coding library).
Optimized to be able to **import 60PB of data daily**.
Estimated to **save company upwards of \$4 million per year** in storage costs.
Written in **Java, C++**.
- Developed a distributed task scheduler** for HDFS services such as Copying, Balancing of HDFS DataNodes, and moving data across data centers.
Runs roughly 400 long running jobs daily to manage storage of data across **25 data centres and 300k DataNodes**.
Improves I/O and storage utilization balance across DCs.
Made with **Java** with **Spring** and **Gradle**.
- Maintainer and developer of our in-house NameNode manager**.
NameNode manager acts as a fast path partition and mount manager for client lookup before accessing the filesystem.
Allows for horizontal scaling of our filesystem with HDFS Federation, manages 350 NameNode clusters.
Made with **Go** and **Zookeeper**.

GARENA | SOFTWARE ENGINEER, BACKEND

Jan 2021 – Oct 2022 | Singapore, SG

- Conceptualized, designed and implemented a brand new messaging service for the Booyah! livestreaming app. Able to handle **100k QPS** globally across all chat groups and **1M concurrent users** in a chat group. **Peak CCU of 300k users during Free Fire World Series 2022**. Build and deployed via Jenkins to Kubernetes clusters. Made with **Go, Redis and ScyllaDB**.
- Optimized and tuned use of Redis Client Libraries and Redis Cluster to provide a **20% speedup** in cache requests, and better telemetry and observability for all engineers.
- Implemented all features related to **Elasticsearch** for performant search, filter, sort, pagination use in our new club service for Booyah!. Optimized to be able to handle **40k QPS** across all features using Elasticsearch.
- Developed dashboard, metrics, logs and tracing (telemetry) for our messaging service in Booyah! using **Prometheus, Grafana, Elasticsearch** and **Jaeger**.
- Developed SeaTalk Meets Beta, an internal video conferencing tool based on WebRTC. Developed the frontend and desktop client for the video conferencing using **React** and **Typescript**. Product was in internal trial phase before my rotation to Booyah! Server Team.