

# Alistair Ong

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Eligible to work in US with **H1B1 visa (Singapore)**, 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.