

# Andrew Ho

github.com/anmho  
andrewho.io

## EDUCATION

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### University of California, Irvine

Expected June 2025

*B.S. in Computer Science, Minor in Statistics*

**GPA 3.83**

**Coursework:** Relational Databases, NoSQL, Algorithms, Search Engines, Distributed Systems, Operating Systems

## EXPERIENCE

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### Software Engineer Intern | Cloud Data Backend

Sep. 2023 – Oct. 2023

*Snap Inc.*

*Los Angeles, CA*

- Designed and implemented multi-dimensional range partitioning for *Apache Druid* analytics database cluster.
- Created *Apache Beam* & *Spark (PySpark)* pipelines to evenly distribute rows across data segments using *quantile sketches* and salted range indexes to remove hot-keys and improve query speed and compute costs by **35%**.
- Served analytics data through *Hasura GraphQL* proxy to *React* dashboard, reducing load times by **50%**.

### Learning Assistant | Operating Systems

Apr. 2024 – Present

*University of California, Irvine*

*Irvine, CA*

- Taught **250+** students about syscalls, processes, threads, virtual memory, scheduling, networking, and synchronization in *ICS 53 Principles of Operating Systems*
- Held weekly office hours to assist students with debugging, assignments, and conceptual understanding of operating systems principles

### Software Engineer Intern | Distributed Messaging

June 2023 – Sep. 2023

*Snap Inc.*

*Los Angeles, CA*

- Deployed *Apache Kafka* cluster using *Kubernetes* to process **200TB/day** analytics metrics stream.
- Developed real-time data warehouse ingestion into *Google Cloud Storage* using *Apache Druid* streaming ingestion
- Integrated with *Envoy* service mesh using *Go*, *gRPC*, and *Helm* saving infra costs by **24%**.

### L4 Software Engineer | Backend Engineering

Dec. 2022 – Present

*UCI Student Center & Event Services*

*Irvine, CA*

- Spearheaded a data analysis dashboard to assess employee performance and streamline data export to annual reports, saving **100+** employee hours during fiscal year-end using *C#*, *.NET*, *Typescript*, *D3.js*, and *SQL Server*.
- Build and deploy employee management tools such as *LevelUp* (performance review platform), event booking, and reservation services to streamline event planning procedures.

### Research Developer

June 2020

*Stanford University*

*Palo Alto, CA*

- Collaborated in team of four engineers and designers to deliver pandemic simulation tool using **Javascript**
- Explored stochastic Brownian motion agent-based models to simulate Covid-19 spread and social distancing.

## PROJECTS

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### Unix Shell | *C*, *gcc*, *Docker*, *Ubuntu*, *bash*

- Created a Unix shell with built-in commands such as *cd*, *ls*, *mkdir*, *rm*, *grep*, *history*, *piping*, and *redirection*
- Supports infinite piping, background processes, graceful shutdown, and signal handling.

### Map Reduce Implementation | *Go*, *Docker*, *Amazon Web Services*

- Implemented a distributed MapReduce framework using *Go* for parallel processing of large datasets.
- Driver process distributes tasks among workers and handles worker failures through RPC communication.

### Distributed Key-Value Store | *Go*, *gRPC*, *Docker*, *Kubernetes*

- Developed multithreaded distributed key-value store cluster in *Go*, using *Raft*, *LSM trees*, and bloom filters
- Implemented hot-cold system using LRU eviction and compaction.

### Multithreaded Course Registration Web Server | *C*, *TCP*, *Unix Sockets*, *Network Programming*

- Created a multithreaded *C* web server using *pthreads* and locks to handle concurrent registration requests.
- Implemented max thread pool size to prevent server from being overloaded while maintaining high throughput.

## TECHNICAL SKILLS & AWARDS

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**Languages:** Go, Python, Java, TypeScript, Scala, HTML, CSS, SQL, R, C, C++

**Tools/Frameworks:** Spring Boot, Express, React, Kubernetes, Docker, gRPC, GraphQL, AWS, Google Cloud, Flask, Django, PostgreSQL, MySQL, Node, Git, MongoDB, Cassandra, DynamoDB, Spark, Stripe, PyTorch, pandas, numpy