

Zachary Liou

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Experience

Google (YouTube)

Software Engineer - Infrastructure, Data, and APIs

Utilized: C++, Python

San Bruno, CA

8/2018 - 3/2023

- Implemented API endpoints, indexers, and queue receivers for the internal YouTube video metadata API, which regularly handles *X00,000 queries per second*.
- Optimized the YouTube external video metadata API endpoints by adding parallel RPC orchestration and migrating implementations to C++ from Python, resulting in *~85% p95 latency reduction*.
- Migrated *billions* of database rows from Vitess to Spanner with *zero downtime* for dependent services, resulting in cost savings of *millions* of dollars.
- Implemented a full-stack tool for transferring video ownership between channels that regularly processes *X0,000 transfer requests per day*. (Utilized: TypeScript, LitElement, Jasmine, and REST)
- Resolved feature requests and bugs affecting high-growth verticals (e.g. YouTube Shorts Trust & Safety pipelines) and high-profile channels (e.g. government agencies & news organizations).
- Implemented a new semantic layer for the internal video metadata API, which accounted for issues such as lack of transactionality between microservices and queue message deduplication, and utilized tools such as C++ templates and templated code generation.

Google (YouTube)

Software Engineering Intern

Utilized: JavaScript, Python, Polymer, Jasmine

Mountain View, CA

6/2017 - 9/2017

- Modernized the interface & UX of the review queue management tool for Trust & Safety administrators.

Track Revenue

Software Engineering Intern

Utilized: JavaScript, AngularJS, PHP, AWS, Jenkins

San Francisco, CA

6/2016 - 9/2016 and 12/2016 - 1/2017

- Reduced annual overhead by approximately \$60,000 by engineering a framework for automating backups of AWS EBS instances, with integration into Jenkins. Built a vanilla JavaScript bot detector.

Partners in Life

Founder, Consultant

Utilized: TypeScript, React Native, Firebase

La Jolla, CA

Founded Sept. 2018

- Nonprofit providing an electronic records solution for free clinics servicing underprivileged/homeless populations in San Diego County. Mentored a team of junior software engineers.

Education

University of California, San Diego

Bachelor of Science in Mathematics-Computer Science

Founder, Triton Software Engineering (tse.ucsd.edu) Pro-bono apps, websites, & tools for local nonprofits.

Founder/CTO of Egge (eggeapp.com) Hyperlocal spontaneous event planning app.

La Jolla, CA

2014 - 2018

Skills

Programming languages: C++, Python, Rust, TypeScript, JavaScript, SQL, CSS

Technologies: Cloud Spanner, Vitess, Kubernetes, Looker, Cloud DataFlow, gRPC, Protobuf, Abseil, Mercurial, Git, production management, service migrations, incident management

Volunteering

gPause YouTube: Guided 80+ hours of meditation across 160+ sessions since 2020, for groups as large as 15 participants and as intimate as 1-on-1s. Supported colleagues' well-being via mindfulness training.

Personal

Multi-instrumentalist: guitar, piano, and alto saxophone. Surfer and snowboarder. Meditation guide. Avid investor in stocks and real estate. Conversationally fluent in Mandarin.