Zachary Liou

zachliou@gmail.com · 510-585-7592 · SF Bay Area

Experience

Google (YouTube)   **San Bruno, CA**
Software Engineer – Infrastructure and APIs   **8/2018 - 3/2023**
Utilized: C++, Python
- 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 HTTP 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 code autogeneration.

Google (YouTube)   **Mountain View, CA**
Software Engineering Intern   **6/2017- 9/2017**
Utilized: JavaScript, Python, Polymer, Jasmine
- Revamped YouTube's video review queue management system for Trust & Safety administrators.

Track Revenue   **San Francisco, CA**
Software Engineering Intern   **6/2016- 9/2016 and 12/2016-1/2017**
Utilized: JavaScript, AngularJS, PHP, AWS, Jenkins
- Engineered a framework for automating backups of AWB EBS Instances, with integration into Jenkins, reducing annual overhead by approximately *$60,000*. Built a browser-based bot detector.

Partners in Life   **La Jolla, CA**
Founder, Consultant   **Founded Sept. 2018**
Utilized: TypeScript, React Native, Firebase
- Nonprofit providing an electronic records solution for free-clinics servicing underprivileged/homeless populations in San Diego County. Mentored a team of software engineers and delivered an MVP.

Education

University of California, San Diego   **La Jolla, CA**
Bachelor of Science in Mathematics-Computer Science   **2014 - 2018**
Founder of Triton Software Engineering, Founder/CTO of Egge

Skills	**Programming languages:** C++, Python, TypeScript/JavaScript, SQL, HTML, CSS **Technologies:** Cloud Spanner, Vitess, Kubernetes, Looker, Cloud DataFlow, gRPC, Protobuf, Abseil, Fig/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 via mindfulness training through the COVID-19 pandemic, which has made mental health particularly salient.
Personal	Multi-instrumentalist: guitar, piano, and alto saxophone. Surfer and snowboarder. Meditation guide. Avid investor in stocks and real estate. Conversationally fluent in Mandarin.