Yifeng Huang

me@fyhuang.com
github.com/fyhuang

Strong generalist, product engineer, and engineering leader

EXPERIENCE

Google
Engineering Manager, Staff Software Engineer
2021-present

Google Distributed Cloud – Kubernetes Storage

- Led a team of 10 to scale up hybrid on-prem/private cloud Kubernetes storage product, increasing deployments by 5X in a year. Identified quality issues and fully productionized MVP storage solution. Launched a new, dramatically simplified billing system. Closed major security and auditability gaps.
- Developed and executed roadmap for operational supportability, including advancements to testing, automated incident response, and improved oncall protocols. This unlocked our largest customer to scale up their deployment ($10s of M per year).
- Built fully on-premises, air gapped (no Internet connectivity) storage for private cloud appliance. Delivered a key piece of major contract.

YouTube – Abuse Detection

- Developed fully integrated abuse detection system driven by user feedback. Scaled up to support 150M user interactions per month.
- Improved team's client-side development velocity by an order of magnitude, through modernizing the tech stack (TypeScript, Wiz Next) and UX, defragmentation and simplification, and cleanly separating shared ownership with other teams.
- Launched new C++ backend service for processing user notifications, capable of handling very high fanout ratios (1:100k).
- Developed improved signal computation pipeline, enabling use of richer user feedback signals in ML models.
- Delivered comprehensive compliance solution and fully mitigated risks from new DSA law.

rideOS – autonomous vehicle mapping & routing startup
Founding Engineer, Tech Lead
2017-2020

- Developed and launched the RideHail API product, a stateful high-availability ride hailing backend and API. Mentored team of 4 engineers to ship features like API versioning, pre-scheduled trips, package delivery, and the internal data platform. RideHail API helped the company take a big step toward achieving product-market fit, by bringing in some of the company's first paying clients.
- Helped design & build in-house mapping and routing microservices in Java, deployed on Kubernetes with Helm.
- Led integration with autonomous vehicle partners, both in backend and on-vehicle (ROS).

Google – Nest 2013-2017
Senior Software Engineer

- Led a team of 3 to develop and launch a brand new 4K video stack for Nest Cam IQ. Implemented custom encoder stack on top of Android/Brillo C++ platform. Led video encoder benchmarking and vendor selection for the 4K camera hardware platform.
- Launched a real-time cloud transcoding service, replacing a legacy 2-stream architecture on 4K cameras. Supported smooth playback even on 3G without compromising recording quality of the 4K video. Custom frame-based architecture supports extremely low latency measured in frames.
- Dramatically improved playback latency, reducing worst-case by over 10x (>30s to ~2s). Optimized every piece of the stack, including encoder optimization, encode-side bitrate adaptation, improved dynamic jitter buffer implementation on player, and prototyping with custom UDP and FEC-based architecture.

OTHER WORK

- **Img2loc.** Browser-based demo and source code. Camera-only localization of photos anywhere on Earth using deep learning. Implemented full ML system, including: dataset creation, model selection, fine-tuning, packaging & deployment.
- **Computer Vision/Camera Consultant (2020-2021).** Real-time computer vision with CUDA.
- **Dropcam (2013 – acquired by Google/Nest).** Firmware engineer on C/Lua codebase with async I/O and green threads. Embedded firmware in C for a battery-powered Bluetooth LE product.

SKILLS

Distributed systems | Kubernetes | GCP | SQL (Cloud Spanner)
C++ | C | Rust | Python | Java
Video | h.264 | RTP | RTSP | ffmpeg

EDUCATION

Stanford University, B.S. Symbolic Systems.