

# Yifeng Huang

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I aspire to be a **strong generalist** who can make impactful contributions at every stage of taking products from zero to success. I have:

- Built zero-to-one products at early-stage startups (rideOS)
- Worked on deeply technical video encoding & firmware challenges (Nest)
- Led and scaled a team as an engineering manager (YouTube T&S).

I'm a self-motivated learner and can quickly adapt to new technologies and domains. Outside of my day-to-day work, I'm building end-to-end projects to expand my applied ML skills.

## Selected Work

### Img2loc

Self-directed learning project. Camera-only localization anywhere on Earth (no GPS) with deep learning. Source code: [github.com/fyhuang/img2loc](https://github.com/fyhuang/img2loc)

- **Launched [in-browser inference demo](#) using ONNX Web Runtime.**
- **Implemented every stage of an end-to-end deep learning system.**
  - Researched existing approaches by reading 10 papers a month.
  - Curated 3 custom image-geolocation datasets.
  - Trained multi-label classifier in PyTorch.
  - Packaged finished model and deployed to in-browser demo.
- **Optimized model performance across the pipeline.**
  - Large scale dataset cleaning using clustering based on CLIP embeddings + PCA.
  - Implemented custom Torch metric: Geoguessr score.
  - Wrote library for retrieving large-scale geotagged image datasets from Flickr.
- PyTorch, Lightning, Pandas, TensorBoard, ONNX, OSM, Ansible.

### YouTube Trust & Safety

Engineering Manager, Staff SWE

2021-present

- **Grew the team from 3 to 8 engineers and launched 4 major projects in 2 years.**
- **Increased team's ownership and scope to two new areas.**
  - Expanded scope to close severe mismatch between team's product and technical scope.
  - Built new frontend & UI skillset for the team and took ownership over product frontend.
  - Developed new signal computation and data pipelines, and took ownership of serving signals for ML models, rules, and human analysts.
- **Improved frontend productivity ~10x with new frontend architecture.**
  - Modernized the product UX using a centralized, cross-platform tech stack.

- Improved turnaround time from 2-3 quarters for minor changes, to launching new features and surfaces with just weeks of coding.
- **Responsible for full end-to-end stack.**
  - Backend C++ infrastructure processes 150M user flags per month.
  - Integration with abuse review systems and ML filtering models.
  - Frontend in TypeScript, Elements, Wiz Next.

**rideOS – autonomous vehicle mapping & routing startup**  
 Founding Engineer, Tech Lead

2017-2020

- **Developed & launched company's first customer-facing SaaS product.**
  - Led a team of 4 to develop ride hailing API for autonomous vehicle dispatch.
  - Landed company's first client, and helped company find product-market-fit.
- **Worked across the stack to develop sophisticated routing & dispatch capabilities.**
  - A\* routing engine with no-downtime map updates from OSM.
  - Java microservices stack on Kubernetes + Helm + gRPC.
  - Built on GCP tech stack: Spanner, GKE, Bigtable, BigQuery.
  - On-vehicle (ROS) and backend integrations with autonomous vehicle partners.

**Google (Nest)**  
 Senior Software Engineer

2013-2017

- **Launched 4k live-streaming on Nest Cam IQ as video stack tech lead.**
  - Led team of 3 to develop brand-new video stack on C++ Android platform.
  - Enabled launch of the company's first 4k Nest Cam.
  - Optimized end-to-end latency 15x (>30s to <2s) by launching multiple projects across the stack (device firmware, cloud backend, iOS/Android apps).
- **Implemented and launched team's first real-time transcoding service.**
  - Solved significant architectural hurdles posed by new 4k camera product.
  - Cloud service written in Go/C++/Cgo, backed by ffmpeg.
  - On-demand, low-latency (# b-frames + 1) transcoding for adaptive live streaming.
- C++, Android platform, h.264, Opus/Speex, ffmpeg, Scala.

## Other Experience

- **Computer Vision/Camera Consultant (2020-2021).** Real-time computer vision projects with C++ and CUDA.
- **Dropcam (2013 – acquired by Google).** Firmware engineer on C/Lua codebase with async I/O and green threads. Embedded firmware in C for a battery-powered Bluetooth LE product.

## Education

Stanford University, B.S. Symbolic Systems. 2013