



Gurinder Singh

Staff iOS & Applied AI/ML Engineer

★ Career Summary

Staff iOS & AI/ML Engineer with over a decade of experience scaling applications for **millions of users**. **Patent-holder** and technical leader specializing in bridging cutting-edge AI/ML with practical mobile solutions. Proven track record of building **legendary apps at global scale**, from startup innovation to enterprise solutions serving **90M+ users worldwide**. Passionate about mentoring engineers, conducting technical interviews, and fostering inclusive tech communities while driving innovation at the intersection of iOS and artificial intelligence.

90M+

Users Impacted Globally

28+

Hackathons (6+ Countries)

Advisory

Board Member

Patent

Holder



Core Skills

Languages & Frameworks

Swift, SwiftUI, Python, TypeScript, Next.js, FastAPI, Vapor (Server-Side Swift), Objective-C, Flutter/Dart

AI/ML Stack

LLM Agents, RAG Pipelines, LlamaIndex, Supabase, ChromaDB, Pinecone, Core ML, MLX, **LoRA/QLoRA**, Stable Diffusion, LangChain, DeepLake

Mobile Systems

UIKit, WidgetKit, Dynamic Island, SwiftData, Realm, Combine, UIKit, Async/Await Architectures, Feature Flags

Cloud & Infrastructure

Supabase Edge Functions, Docker, RunPod, **DataDog (Observability)**, AWS Serverless (NodeJS/Lambda), DynamoDB, Cloudflare Tunnels, Hostinger VPS

Dev Practices

CI/CD Automation, Observability, Snapshot Testing, State Machines, Accessibility, Concurrency

Creative Tooling

FFmpeg, ComfyUI, ElevenLabs, Whisper-MLX, **MCP (Model Context Protocol)**, Bluetooth Low Energy (BLE)



Experience

Staff iOS Engineer → Applied AI/ML Engineer

PayPal / Venmo

2020 – Present



AI/ML Evolution & Technical Innovation (2023–Present)

Team Mercury – AI-Powered Agentic E-Commerce Platform (October 2025)

- Built PayPal/Venmo's **first applied agentic AI platform** for autonomous merchant onboarding and product enhancement
- Pioneered AI image generation with custom **SDXL LoRA models** producing professional imagery in ~30 seconds, **saving merchants \$100–\$500 per product**
- Delivered **first org-wide MCP (Model Context Protocol) integration** for seamless AI agent orchestration
- Achieved **58.5 GPU hours training, 23% loss reduction**, 109MB production-ready model managing 5 product categories
- Implemented multi-platform automation managing Venmo, Honey, Facebook/Meta, Google Ads, and TikTok campaigns

AI/ML Implementation & Automation (2024)

- Developed **AI-powered crash detection system** using LangChain + DeepLake with automated DataDog monitors — **now adopted org-wide**
- Created **10%+ productivity improvements** via AI-powered automation tools
- Championed AI coding assistants across teams, training colleagues on leveraging AI

iOS Engineering Excellence & Business Impact

Major Product Launches & Partnerships

- **Amex Partnership (2020):** Built payment-splitting integration for **\$400M partnership deal**
- **Pay With Venmo Checkout (2024–Present):** Key stakeholder driving hypergrowth through merchant integrations, **server-side Swift implementation**, and end-to-end integration architecture
- **QRC Touch-Free Payments (COVID era):** Led moonshot initiative winning **\$60M CVS contract** for contactless payments
- **Venmo × Amazon Partnership (2023):** Built sandbox/integration app in **two days** for partnership launch
- **Gift Cards (2023):** Led successful delivery of mission-critical feature for majority iOS user base

iOS Innovation & Patents

- **QRC Widget Patent (2022):** Filed "**Interface Widget Tool for Automatic QR Code Generation**" (PayPal Ref. OCP.D2021.103924.US1). First team to use SwiftUI for iOS widgets at Venmo. **Reduced user friction by 66%**
- **Dynamic Island / Live Activities:** Built end-to-end infrastructure including server-side Swift implementation
- Architected merchant features spanning Live Activities, QR code widgets, and Supabase-powered notification systems reaching **millions of active users**

Technical Leadership & Impact

- Mentored cross-functional engineers on concurrency, accessibility, and feature-flag driven development
- Partnered with Design Systems to create modern SwiftUI component library that **cut feature development time by 30%**
- Built internal AI observability tooling using DataDog to trace inference latency and prompt performance across services

iOS Developer/Consultant

Google Stadia

July 2019 – 2020

- Worked on Google Stadia for mobile platforms, primarily in Flutter/Dart
- Leveraged iOS domain expertise for native iOS plugins, troubleshooting, and debugging crash reports

iOS Developer/Consultant

Morgan Stanley

April 2018 – July 2019

- Worked on Hybrid (Cordova + Native) Banking and Wealth Management apps for iOS
- Developed key features: check-deposit, **biometric authentication**, certificate-pinning, jailbreak detection, push authentication
- Migrated codebase from 98% Objective-C to 80% Objective-C / 20% Swift

Mobile Developer / R&D

Parabit Systems

October 2017 – March 2018

- R&D for iOS, Android, Cloud, and Blockchain applications

- Created internal tool using **Bluetooth Low Energy** for wireless firmware upgrades (DFU)
- Built app from scratch using Swift with **AWS Serverless (NodeJS/Lambda)** and DynamoDB

Mobile Developer / R&D

Gedeon GRC

January 2017 – October 2017

- **First software engineer** in engineering firm of 70 engineers
- Built **Wayaj** — first travel app for sustainable and socially responsible vacations
- Developed from scratch using Swift with AWS Serverless backend



Technical Leadership & Team Building

Advisory Board & Strategic Leadership

- **Advisory Board Member** for multiple tech startups, providing strategic guidance on iOS architecture and AI/ML implementation
- Conducted **technical interviews** for senior iOS and AI/ML positions across multiple companies
- **Technical mentor** for emerging engineers transitioning from mobile to AI/ML domains
- Strategic advisor on product roadmap decisions and technology stack selections

Mentorship & Knowledge Sharing

- Hosted multiple technical workshops: **SwiftUI (first adopter)**, State Machines, Snapshot Testing, DataDog automation, **AI/ML image generation**
- Created comprehensive documentation serving ML architects and non-technical stakeholders
- Onboarded and mentored multiple senior engineers, creating growth plans and advocating for advancement
- Transformed from individual contributor to technical leader empowering team autonomy
- Championed AI coding assistants across teams, training colleagues on leveraging AI

Cross-Functional Collaboration

- Broke down silos across iOS, Android, Backend, SRE, and Product teams for seamless delivery
- Established product office hours after advocating for better Product representation
- Served as liaison on complex integration projects (Amex, Amazon, CVS partnerships)
- Partnered with Design Systems to create modern SwiftUI component library that **cut feature development time by 30%**

♥ Cultural Impact & Community Leadership

Diversity & Inclusion

- **Interfaith ERG Chapter Lead (Sikh community):** Organized events, secured speakers, created educational content including **interactive HTML game**
- **Built next generation:** Represented Venmo at Yale hackathons and visited high schools with tech education initiatives
- **Volunteered extensively:** Outside work hours for fundraising and community events, elevating Venmo brand visibility

Technical Community Leadership

- **Technical Workshop Series** — SwiftUI, State Machines, AI/ML image generation, DataDog automation
- **Documentation Systems** — Comprehensive guides for ML architects and non-technical stakeholders
- **Mentorship Programs** — Growth plans and advancement advocacy for senior engineers

Recognition & Awards

- **Multiple PayPal Props Awards:** Paragon (5000 pts), Phenom (1500 pts), Powerhouse (750 pts)
- Consistent "**Successful**" **performance ratings** with leadership principle exemplification
- Recognized for: **Customer obsession, innovation mindset, collaboration excellence, building next generation**

Hackathon Achievements & Innovation

28+ hackathons attended across **6+ countries** as participant, mentor, and judge. Earned **2 first-place wins** and served as a judge at Yale (2x) and mentor at multiple events. Recognized globally for innovation and technical excellence.

Featured Achievements

MLH @ Bloomberg London (2017)

 **1st Place**

Automated Search & Rescue System — Won first place among 500+ participants. Built drone rescue system using DJI SDK. **Featured in BBC documentary** about Hackathons/Hackers.

Devcamp NYC (2016)

 **1st Place**

Talent Management App — Won first place among 300+ participants at Google NYC. Built app for modeling agencies to interact with talent and customers.

HackZurich (2018)

 **Finalist**

AR Car Buying Tool — Made it to finals among 400+ participants. Created AR tool to help people buy cars. Featured in Credit Suisse interview. **Attended HackZurich 4x**

Mentorship & Judging

- **Hack Yale** — Judge (2x) — Yale University, USA 🇺🇸
- **PenApps** — Mentor — The University of Pennsylvania, USA 🇺🇸
- **Hack Yale** — Mentor — Yale University, USA 🇺🇸

Global Hackathon Participation

- 🇪🇸 UPC Barcelona (2016) — Refugee Crowdsourcing App
- 🇩🇰 Copenhacks (2017) — Microsoft Copenhagen
- 🇺🇸 HackNY (2016) — New York University
- 🇺🇸 Hack Cooper Union — Cooper Union
- 🇺🇸 Hack Dartmouth — Dartmouth University
- 🇺🇸 Multiple MLH events
- 🇨🇭 HackZurich (4x attendee)
- 🇬🇧 Various UK hackathons

Innovation Impact

- **BBC Documentary Feature** — Recognized for innovative drone rescue system
- **Credit Suisse Interview** — Featured for AR car buying tool innovation
- **Cross-Cultural Collaboration** — Worked with international teams across 6+ countries
- **Technical Mentorship** — Guided 50+ participants through complex technical challenges

</> Venmo Innovation Projects

AI/ML Innovation at Venmo

- **Team Mercury Platform** — Hackathon-born agentic AI platform integrating image generation, LoRA-trained models, and multi-platform automation
- **AI-Powered Crash Detection System** — LangChain + DeepLake implementation with automated DataDog monitoring
- **Custom LoRA Training Pipeline** — Trained on 56k products across 5 categories (cosmetics, electronics, home, fashion, food) with 250 images each for a 109MB production-ready model
- **MCP Integration Framework** — First org-wide Model Context Protocol implementation for AI agent orchestration

Mobile Innovation Projects

- **QRC Widget Patent** — "Interface Widget Tool for Automatic QR Code Generation" (PayPal Ref. OCP.D2021.103924.US1)
- **Dynamic Island Infrastructure** — End-to-end Live Activities implementation with server-side Swift

Education

New York City College of Technology, Brooklyn

BS in Computer Systems (Deferred)

2012 – 2016

Keywords (ATS Optimization)

AI Engineer

iOS Staff Engineer

LLM Agents

RAG Pipelines

Supabase

Swift

Core ML

MLX

Stable Diffusion

Automation

DataDog

FastAPI

Next.js

LoRA

MCP

Edge Functions

Applied AI

Hackathon Innovation

Patent

Agentic AI

Server-Side Swift

Live Activities

Dynamic Island

SwiftUI

ActivityKit

WidgetKit

LangChain

DeepLake

Flutter

Dart

Objective-C

AWS Serverless

Lambda

DynamoDB

Bluetooth Low Energy

BLE

Biometric Authentication

Certificate Pinning

Jailbreak Detection

CI/CD

Observability

Snapshot Testing

State Machines

Accessibility

Concurrency

Feature Flags

Async/Await

FFmpeg

ComfyUI

ElevenLabs

Whisper-MLX

ChromaDB

Pinecone

LlamaIndex

Docker

RunPod

Cloudflare Tunnels

Hostinger VPS

Cordova

Hybrid Apps

Blockchain

DFU

Travel Apps

Sustainable Technology

Interfaith ERG

Diversity & Inclusion

Community Leadership

PayPal Props Awards

Performance Ratings

Customer Obsession

Innovation Mindset

Collaboration Excellence

Building Next Generation

⌘ Building legendary apps at the edge of iOS & AI.