

# Tongze Mao

Email: tongzema@gmail.com | Portfolio: <https://t-mao.github.io> | Work Authorization: U.S. Permanent Resident

## WORK

### SupTech – Software Developer & Team Lead

Apr 2024 – Apr 2025

- Directed a four-engineer team that designed, built, and shipped cross-platform Consumer & Technician apps (Flutter + Firebase), launching the firm's first self-service product and cutting customer-support workload by 85%.
- Architected a Node.js micro-service layer and WebSocket gateway that decoupled business domains, enabled horizontal scaling to 10 k concurrent sockets, and pushed real-time update latency below 150 ms.
- Engineered a state-machine-driven order-lifecycle workflow with real-time push notifications, slashing dispatch SLA 70 % and eliminating manual Excel trackers.
- Integrated Stripe Connect (instant payout & escrow), geo-search (Haversine), encrypted chat, an AI-powered repair assistant, and multilingual UI, unlocking self-service onboarding and halving support tickets.
- Implemented end-to-end encryption (RSA-2048 handshake + AES-GCM data channel), achieving 100 % PCI-DSS & SOC 2 compliance and boosting customer trust.
- Automated releases with fastlane + GitHub Actions, cutting mean time-to-release to 2 days and crash rate to under 0.2 %.
- Drove Agile ceremonies (planning, grooming, retros) that lifted team velocity 70 % and sustained 98 % on-time delivery across 14 sprints.
- Led TDD adoption across a 380 K-LOC Dart monorepo, achieving 96% coverage with 500+ unit/integration tests and automating nightly regressions via a CI matrix.

### TZAppify – Founder & Principal Engineer

Jan 2024 – Present

- Solo-ideated and shipped 8 SwiftUI apps, flagship DoneTodo reached #18 Productivity in App Store.
- Follow-up titles SparkDays (#112 Lifestyle) and WayLater (#169 Lifestyle) entered their categories' top-200 within 10 days, validating repeatable product-market fit.
- Built reusable Swift packages (iCloud + Core Data sync, 50-level undo/redo, Swift Charts analytics) and one-click CI/CD (Fastlane, TestFlight, notarization) saving ~80 % release effort.
- Instrumented Firebase Analytics, increased D7 retention 23 % by optimizing onboarding funnel.

### The Chinese University of Hong Kong – Research Intern, Stereo 3D Reconstruction

Jun 2023 – Aug 2023

- Automated a stereo-video data pipeline (Python, MATLAB) for 80 GB of endoscopic footage—aligned frames, disparity maps, COLMAP poses—65 % faster than previous flow.
- Authored a concise wiki + weekly briefs on NeRF/point-cloud options that steered the lab's 3-D roadmap and let 5 new researchers replicate results in < 24 h.

### HD EDU – Senior Calculus Tutor

Jul 2021 – Jun 2024

- Taught 200+ students through interactive curricula, promoted twice for consistent 5-star feedback.
- Authored problem banks & grading scripts, showcasing communication, mentoring, and documentation strengths.

## PROJECTS

### Goshsha App – AR shopping (React Native / Expo)

- Collaborated with founder on pilot evaluated by Sephora, revamped Gen-Z-focused UI/UX and barcode-triggered AR overlays, cut scan-to-render time 40 %.
- Cross-platform build (iOS + Android) with Firebase backend, weekly agile demos with stakeholders ensured on-spec delivery.

### HowDidI App – Paid résumé-sharing platform (Swift + Firebase)

- PM & tech lead for 3-person team, real-time Firestore sync, image caching, 100 % Swift Concurrency.

### CheckersAI – Alpha-beta search agent (Python)

- Implemented transposition tables & Zobrist hashing, 80 % win-rate vs. baseline, 92 % pytest coverage.

### Spotify Browser – High-performance music streaming web app (Angular + Node.js)

- OAuth flow, lazy-loaded modules, FP16 image pipeline, first contentful paint < 200 ms on Lighthouse 95.

## EDUCATION

### University of California, Irvine (UCI)

Sept 2020 – Jun 2024

Bachelor of Science in **Computer Science**

Bachelor of Science in **Informatics**

Minor in **Statistics**

GPA: 3.94 / 4.00

Cum Laude • Dean's Honor List • Top 5 % of class

## TECHNICAL SKILLS

**Code / Frameworks:** Swift • Dart/Flutter • JavaScript/TypeScript (React, Angular) • Python • Java • C++ • SQL

**Mobile / Front-End:** iOS SDK, UIKit, Core Data, StoreKit, Push Notifications • React Native • Expo • Figma

**Back-End / Cloud:** Node.js (REST/GraphQL) • Firebase • MySQL • MongoDB • Docker

**SDET / QA:** XCTest, XCUITest • Flutter integration tests • Jest • Playwright • Postman • code-coverage & regression pipelines

**DevOps & Tools:** Git • GitHub Actions • Jira • Firebase Crashlytics • Stripe APIs • RSA/AES encryption • Agile/Scrum