

HUNG QUANG TRUONG

Systems Architect | Multi-Platform Engineer

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Primary Stack: Native Swift/Objective-C/C++ (*iOS/macOS*), Kotlin (*Android*), KMP, NextJS/NestJS.

EXECUTIVE SUMMARY

Architectural Specialist with 15+ years of software excellence, specializing in the Apple Ecosystem (*Swift & Objective-C/C++*) and unified system design.

- **Apple Stack Mastery:** Expert in building high-performance iOS/macOS applications. Profound knowledge of Objective-C Runtime and Swift Interoperability, enabling the maintenance and evolution of complex legacy/modern hybrid codebases.
- **Core Foundation:** Expertise in Swift/Kotlin/C++, enabling seamless low-level Core Engine integration within large-scale codebases.
- **Full-stack Orchestration:** Proven ability to unify fragmented systems using Kotlin Multiplatform (*KMP*) for cross-platform logic and NestJS/Microservices for scalable backends.
- **Technical Leadership:** Influenced engineers (*2 teams*) through architectural reviews, engineering roadmaps, and mentoring without formal people-management authority.

CORE EXPERTISE

- **Apple Ecosystem:** Expert in Swift & Objective-C, SwiftUI/AppKit, Combine, Modern Concurrency, Objective-C Runtime/Memory Management (*ARC/MRC*).
- **Systems & Bridging:** Objective-C++, C++ Integration, Multi-process Architecture (*XPC*), Hardware-Software Co-design.
- **Multi-platform & Logic:** KMP (*Business Logic Sharing*), Android (*Kotlin*), Flutter, React Native.
- **Backend & Cloud:** NestJS (*Microservices*), gRPC, RESTful API | S3, GCP
- **Data & Messaging:** PostgreSQL, MySQL, SQLCipher, Realm | Event-Driven (*Kafka*).
- **Governance:** Modularization (*Dependency Graphs*), Architectural Review, CI/CD (*Fastlane/GitHub Actions*).

PROFESSIONAL EXPERIENCE

1. Travel & Tourism Platform | Systems Architect (Contract) | Nov 2025 – Present

- **Full-stack Design:** Architected a unified ecosystem from NestJS Backend to Next.js Frontend.
- **KMP Logic Sharing:** Pioneered the use of Kotlin Multiplatform (KMP) to centralize 50% of core business logic (*Network, Persistence, Validation*). This ensured absolute data consistency across iOS & Android while reducing feature-parity development time by 30%.
- **System Performance:** Optimized data orchestration between the CMS and Frontend using SSR/ISR, achieving sub-1.2s page loads and improving SEO rankings.

2. Floware LLC | Senior/Architectural Engineer | Aug 2018 – Mar 2026

- **Internal SDK & Core Architecture:** Led the architectural roadmap for a shared C++/Swift core engine (*~9,000 files*). Managed the long-term evolution and technical debt, ensuring zero architectural regressions during major OS transitions, including the Intel to Apple Silicon (*M-series*) migration.

- **Core Optimization:** Engineered and maintained the shared C++/Swift core engine. Leveraged Instruments for deep profiling, resulting in a 40% reduction in memory overhead and optimized battery efficiency.
- **Multi-process Strategy:** Implemented a multi-process structure to decouple heavy SDK background logic from the main UI thread, ensuring battery efficiency and 60 FPS performance.
- **Security & Compliance:** Integrated database-level encryption (*SQLCipher*) and automated CI/CD pipelines (*Fastlane/GitHub Actions*) to maintain high security standards.

3. **Strategic Technical Consulting (After-hours) | 2022 – Apr 2025** (*Solving critical engineering bottlenecks and designing high-scale architectures for strategic partners*)

- **Varin (Warehouse Logistics) | Mobile Architect | June 2024 – Apr 2025**
 - **Inventory SDK:** Engineered a high-performance Flutter SDK specializing in real-time industrial hardware scanning and data synchronization.
 - **Native Bridge Engineering:** Authored custom Native Bridges (Swift/Kotlin) via MethodChannels to interface directly with industrial scanner hardware, bypassing standard plugin limitations.
 - **Offline-First & Sync:** Designed a robust synchronization engine using Realm and Kafka, ensuring zero-data-loss for warehouse operations in unstable network environments.
 - **Hardware Integration:** Optimized low-level hardware communication to handle high-frequency scanning with minimal latency and battery impact.
- **Mecu JSC | Team Lead (Small Team) | Mar 2022 – May 2024:** Engineered custom Native Swift modules for high-speed camera scanning and image compression, successfully bypassing React Native bridge bottlenecks to achieve near-native processing speeds.

4. **Research & Development (Internal Tool) | 2025 – Present**

SnifLeaf (*Network Monitoring*): Developing a high-performance network monitoring frontend using Swift/SwiftUI.

- **Network Security Monitoring:** Developing a high-performance network monitoring frontend using Swift/SwiftUI for real-time security audits.
- **Anti-fraud & Anomaly Detection:** Integrated a Python-based pipeline with LLMs for automated detection of security threats and network anomalies.

5. **Left Coast Logic | Senior iOS Engineer | Aug 2015 – Aug 2018**

- **Native Development:** Owned the end-to-end development of Native iOS applications using Swift. Focused on SOLID principles and real-time data synchronization across the Apple ecosystem.

6. **Datalogic | Embedded Software Engineer | 2011 – 2014**

- **Hardware-Software Co-design:** Developed industrial scanner firmware, gaining deep insights into hardware-software co-design and device-level optimization.

7. **Renesas Design Vietnam | R&D Internship (Thesis) | 2009 – 2010**

- Focused on Hardware/Software Co-design, researching system-on-chip (*SoC*) integration and low-level optimization.

TECHNICAL STACK SUMMARY

- **Languages:** Swift & Objective-C (*Expert*), Kotlin, C/C++ (*Core*), TypeScript, C#.
- **Frameworks:** AppKit (*macOS*), SwiftUI, Jetpack Compose, NestJS, Next.js, Flutter.
- **Infra/Security:** SQLCipher, Kafka, gRPC, PostgreSQL, Redis, Fastlane.

ACADEMIC FOUNDATION

- **B.E. in Computer Engineering** – Ho Chi Minh City University of Technology (BK HCM).

ENGINEERING PHILOSOPHY & DISCIPLINE

- **Focus on Fundamentals:** I prioritize OS internals, memory management, and data structures over industry hype to ensure long-term system maintainability.
- **Personal Discipline:** Daily running and meditation provide the mental clarity and focus required for complex technical decision-making and long-term project ownership.