Tin-Trung Pham

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Education

University of California, San Diego — San Diego, CA
B.S. in Computer Science, 3.7 GPA — *Sep. 2019 – June 2023*

Experience

Software Developer — June 2022 – Present
General Atomics Aeronautical Systems — *San Diego, CA*

Software Developer II — *January 2025 - Present*

- Performed in-depth capability analysis through custom testing, providing data that influenced internal design decisions and informed FAA requirement discussions.
- Developed high-performance C++ programs for real-time pilot control station analysis, validating 500+ DO-365B safety-critical software requirements for FAA certification.
- Assisted with comprehensive static code analysis using Fortify and Klocwork, achieving 100% coverage of the codebase and resolving 25+ critical security vulnerabilities
- Spearheaded development of modular code traceability system mapping source code to system requirements, demonstrating object-oriented design principles and reducing audit preparation from weeks to days

Software Developer I — *July 2023 - December 2024*

- Collaborated with project engineers to integrate software with embedded hardware, validating data integrity across ARINC 429, Ethernet, and RS-422 protocols using Wireshark.
- Upgraded virtual desktop-based simulation to hardware-in-the-loop (HIL) testing, reducing system response latency by 15% through real-time execution and dedicated hardware interfaces.
- Designed and implemented a custom testing framework that enabled QA engineers to create test procedures using Excel files, increasing test coverage by 40% and accelerating test development

Software Developer Intern — *June 2022 - August 2022*

- Analyzed and refined documentation for internal testing tools to ensure complete compliance with FAA performance regulations
- Designed a Qt Creator-based user interface for internal testing tools that adhered to strict FAA regulations
- Developed automation framework for internal testing tools that enabled continuous batch testing of 2000+ flight scenarios, reducing active testing time by 95%

Projects

Craps Simulator | *JavaScript, HTML/CSS, Electron, Jest* — March 2025 - April 2025

- Architected and developed a cross-platform casino craps simulator using JavaScript, HTML/CSS, and Electron, implementing a modular design with clear separation between game logic, betting system, UI, and storage components
- Applied software engineering best practices including SOLID principles, pure functions, and immutable data patterns to create maintainable, testable code with predictable state management
- Implemented comprehensive test suite with 50+ unit and integration tests using Jest, achieving 100% code coverage through test-driven development practices

Prayer Board | *MongoDB, Express, React, Node* — July 2021 - August 2021

- Created interactive media platform web application leveraging Express and React
- Stored and served prayer requests from multiple Christian organizations at UCSD to share using MongoDB
- Peaked with 40+ users sharing 15+ prayer request each day

Technical Skills

Languages: C/C++, Python, SQL, JavaScript, Node.js, HTML/CSS
Frameworks: Electron, React, Django
Testing Frameworks: Jest, JUnit
Developer Tools: SVN, Git, GitHub, Wireshark, Klocwork, Fortify
Systems: Real-time Systems, RTOS (VxWorks), Hardware-in-the-loop (HIL)
Security Clearance: Secret-Level Clearance — November 2023 - Present