Joshua Lollis

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Portfolio | GitHub

C++-fluent nontraditional new-grad SWE with 10+ years of academic and personal work building modular, testable components and tooling, including real-time full-stack applications. Demonstrated meticulous attention to detail at Thales by supporting the content integration team, validating A/V metadata against contract specs, and producing detailed defect reports.

Education

B.S. Computer Science (GPA: 3.63)
California State University - Fullerton, January 2026 .

Skills

Stack C++, Python, C#, Unity
Env | Linux, Windows, Android
Tools | Git, CMake, GitHub (Issues, PRs, Projects)
Methods | Agile/Scrum (standups), Kanban, roadmapping

Projects

Full-Stack Game Software – *Antillery* (Capstone, Solo) – [Unity, C#, UXML, USS, Addressables]
2D artillery game with async scene loading and ScriptableObject-driven state machines.
- Built an async loading framework using Addressables + ScriptableObject-based states.
- Implemented the match loop (turn alternation, timers, damage, win/loss).
- Structured unit behavior via composition and a factory-built state machine.

Embedded Firmware - Pico Telemetry Node (Personal, Solo) - [C/C++, Unity Test, Pico, CMake, Python]
Pico telemetry/command node with a framed serial protocol, streaming parser, and state machine.
- Implemented framed serial packets with streaming parse, CRC16 validation, and auto-resync on malformed frames.
- Built BOOT/IDLE/ARMED/FAULT state machine with fault handling and HAL abstraction for testability.
- Wrote Python host tool for command injection and telemetry logging; unit-tested state logic using Unity/CMake.

Full-Stack Game Software – *Snake* (Personal, Solo) – [C++, SFML, CMake, State/Command/Observer]
Complete desktop game with menus, gameplay states, pause, persistence, and new mechanics.
- Implemented menu + gameplay state system and decoupled input routing using State/Command patterns.
- Architected gameplay into discrete systems (movement, collision, scoring) to improve maintainability and testing.
- Persisted high scores using JSON serialization across sessions.

API-Driven Desktop App – Card Collection (Academic, Team Lead) – [Python, Qt/QML, JS, REST, Agile]
Desktop app for searching and collecting Pokémon TCG cards via a public API.
- Led a small team through sprints/roadmap and delivered working milestones.
- Implemented async API search over 50k+ cards using Python signals/slots for a responsive UI.
- Built a modular UI with 20+ QML components, using JavaScript for UI logic and Python signals/slots for app wiring.

Hardware Interface Utility – *XB2MIDI* (Personal, Solo) – [C#, .NET, WPF/MVVM, NAudio, XInput]
Windows tool that maps Xbox controller inputs to MIDI messages/macros for DAW/VST workflows.
- Built a low-latency controller input pipeline with debouncing and thread-safe controller to MIDI translation.
- Created an extensible JSON-backed mapping system for modes/profiles and custom bindings.
- Implemented MIDI device lifecycle handling (enumeration, hot-swap, reconnect, rate limiting).

Responsive Static Site – Portfolio (Academic→Personal, Solo) – [HTML, CSS, JavaScript, Chart.js]
Personal portfolio site showcasing projects, skills, and experience with a responsive, interactive UI.
- Actively maintained and iterated on since 2024, adding features and refining UX as new projects are shipped.
- Built reusable UI via component injection; added smooth scrolling, micro-interactions, and an image modal.
- Implemented mobile-first layouts with separate mobile/desktop CSS and device-specific interactions (hover vs. touch).

Select Employment

Content Integration Assistant – Thales *Irvine, CA* | Oct 2021 - Oct 2022
- Performed QA/QC validation of audio/video content against contract specifications and metadata requirements.
- Documented defects with clear reproduction steps and tracked issues through resolution.
- Partnered with technical teams to verify fixes and ensure deliverables met quality standards.

STEM Robotics Educator – Brain Builders STEM Ed *Tustin/Santa Ana, CA* | Aug 2022 - Jan 2023
- Taught introductory programming and robotics concepts (Scratch, basic engineering) through structured lessons.
- Managed classrooms (20–30 students) and communicated progress with staff/parents as needed.