Luis Fernandes

Long Beach, CA | Epitech Tek5 (Systems Engineering) @ CSULB | F-1 (Seeking J-1/JPI)
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Objective

I am seeking a 2026 aerospace software internship in the USA focused on mission software, telemetry pipelines, low-level systems, and scientific simulation (F-1 student; seeking J-1/JPI sponsorship).

Summary

I build performance-sensitive C/C++ systems from first principles and validate them rigorously. My work spans process/ELF-level debugging, syscall tracing, telemetry decoding, and numerical simulation (N-body and relativistic rendering).

Technical Skills

Programming Languages: C, C++20, Python, Java, JavaScript (Node.js), SQL, Bash, PHP, Haskell, x86_64 ASM, VHDL, Verilog, CUDA, OpenCL.
Systems: Linux (10+ years, TTY-first), GDB, Valgrind, ptrace, ELF, kernel compilation.
Numerical/Simulation: N-body dynamics, relativistic rendering, numerical stability, extended-precision arithmetic.
Toolchain/Libraries: gcc/g++, nvcc, Make, CMake; SDL2, Qt, GTK. **DevOps:** Docker, GitHub Actions, Nginx, PostgreSQL. **Hardware:** FPGA (Vivado).

Selected Projects

LBR Telemetry Receiver (Long Beach Rocketry, 2025–Present)
Telemetry reception pipeline: demodulation, decoding, frame reconstruction, and checksum validation.

Backlight: N-body Cosmological Engine (2022–Present, Pure C + CSFML)
Newtonian N-body simulator with custom C projection math and real-time controls; 30+ FPS at 1000 bodies (CPU); extended-precision arithmetic for long-horizon stability; Octree scaling roadmap.

Relativistic Raytracer (2023–Present)
Relativistic rendering pipeline (SR MVP → GR extension). Demos: 1 | 2.

Unix Toolchain Reconstruction (Epitech)
Reconstructed ‘strace‘, ‘nm‘, and ‘objdump‘ (solo) and contributed to ‘ftrace‘ (team) to deepen syscall tracing and ELF-level diagnostics.

Experience

X’PROCHEM — Full Stack Developer Intern Apr 2025 – Aug 2025 (Lille, France)
Delivered an internal R&D intranet (Node.js, PostgreSQL, Nginx, Docker) to track protein-synthesis projects, precompute indicators (mass/pH), and support anomaly prediction from measured mass data.

Monstock — QA Android Developer Intern Sep 2024 – Feb 2025 (Reims, France)
Built bypass mechanisms for Katalon Android testing gaps (unavailable selectors), enabling execution of previously blocked scenarios.

Monstock — QA Tester Intern Oct 2023 – Dec 2023 (Reims, France)
Executed Java/Katalon functional test campaigns, produced hundreds of manual reports, and automated recurring defect scenarios.

Indium Solutions - Groupe Cold — Enterprise App Developer Intern Jul 2023 – Oct 2023 (Maraussan, France)
Built Odoo plugins and a stock-import pipeline processing thousands of products per run in minutes via synonym-based matching.

Education & References

California State University, Long Beach (CSULB) — Exchange (Study@theBeach) Aug 18, 2025 – May 15, 2026
Epitech — Tek5 Systems Engineering Sep 2021 – 2027 (Expected)
Academic reference (Long Beach): Prof. Dan Cregg (CSULB), contact available on request.