

Juan Carlos Cattaneo

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PORTFOLIO

LINKEDIN

GITHUB

Professional Summary

Software Engineer with 5+ years designing hardware-software integration systems and developer-facing APIs for medical devices. Currently leading the acquisition software team, driving OCT engine development, and cross-functional technical initiatives. Specialized in backend systems, platform APIs, and abstraction layers — with full-stack experience spanning C# and .NET on the backend to React and Next.js on the frontend. Proficient in C# and Azure DevOps; skilled at collaborating across cross-functional teams to deliver scalable, well-tested solutions.

Technical Skills

Languages + Frameworks: C# (Primary), C++, Python, JS, Ruby on Rails, .NET/WPF, React, Next.js, Flask, FastAPI

Data: MySQL, SQLite, PostgreSQL, MongoDB

Cloud + Tools: Azure DevOps, CI/CD, Git, OpenCV, Ollama, Vercel, Agile / Scrum

Hardware: Cameras, Sensors, Motors, Arduino, Raspberry Pi, Jetson Nano

AI: GitHub Copilot, Claude Code, Llama, PaddleOCR

Professional Experience

Software Engineer - Acquisition Team Lead | Carl Zeiss Meditec

June 2021 - Present | Medical Device Software Development

- **Acquisition Team Lead:** Leading the acquisition software, driving technical direction for OCT engine development, and coordinating cross-functional efforts across subsystems.
- **AI-Assisted Development:** Integrated GitHub Copilot and Claude Code into daily workflows to accelerate development, code review, unit tests, and documentation.
- **Platform API Development:** Designed and maintained an OCT engine interface layer (DLLs/libraries) consumed by multiple teams for medical imaging hardware abstraction.
- **API Architecture & Integration:** Architected 30+ interface methods for camera, sensor, and motor systems; refactored legacy code while preserving backward compatibility.
- **Platform Engineering:** Built C# WPF/MVVM solutions with 97%+ unit test coverage and architected CI/CD pipelines for automated build, test, and deployment.
- **Complex Systems Debugging:** Reduced critical defects by 40% through root cause analysis of multi-subsystem hardware-software integration issues.
- **Backend Systems Integration:** Built C++ sensor control backend and C# WPF frontend; developed Linux/OpenCV applications for image processing workflows.
- **Code Quality & Refactoring:** Refactored 80% of legacy WPF codebase using OOP principles; established MS Unit and NUnit testing frameworks.
- **Python Automation & Tooling:** Built Python APIs and automation tools for hardware validation and data analysis used by systems and research teams.

Software Engineer Intern | Carl Zeiss Meditec

Intern - Summer/Fall 2021 | Medical Device Software Development

- **Front-End SWE:** Built React web app with Hooks; 90%+ unit test coverage.
- **SQA:** Automated desktop and web tests using Tosca and Testim IO.

Education

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| California State University, East Bay | — B.S. Business Administration - IT Management | 2019 |
| App Academy | — Certificate - Full-Stack Software Engineering (1,000+ hrs) | 2020 |
| Diablo Valley College | — Certificate - Computer Science - Program Design | 2023 |
| Diablo Valley College | — Associate - Business Administration - Economics | 2015 |