Luis Rodríguez Turcios

Software engineer | Medical devices

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Summary

Software engineer with over 5 years of experience, specializing in medical device development with expertise in Real-Time Operating Systems (RTOS) and C/C++ implementations compliant with IEC 62304 and FDA standards. Driven by a methodical approach to software design and architecture to solve complex technical challenges. Self-motivated professional who adapts quickly to new technologies while maintaining high standards in regulated environments.

Professional experience

R&D Software Engineer II

Moog Medical Devices

Costa Rica

Mar 2022 - Present

Perform software development activities ensuring compliance with 21 CFR Part 820 (Design Controls) and IEC 62304 standards.

- Designed an extensible alarm architecture enabling compliant implementation of any alarm type per IEC 60601-1-8.
- Developed and optimized graphical user interface components for medical devices.
- Conducted sustaining engineering projects for medical pump manufacturing systems.
- Performed fault diagnosis and troubleshooting on manufacturing line software written in C# and .NET.
- Integrated Quantum Leaps framework (QP/C++) with GoogleTest, reducing testing overhead by eliminating the need for a separate testing tool for state machine components.
- Developed automated testing framework using Python, reducing device testing time from 1–2 hours per protocol to minutes, enabling full requirements verification in a single automated run.

Automation Developer

GEP

Costa Rica

Sep 2021 - Mar 2022

Designed and implemented automated data processing workflows, integrating KNIME with Power BI to create comprehensive business intelligence solutions.

Software Engineer

CriTech Research Inc.

Costa Rica

Feb 2020 - Sep 2021

Executed comprehensive software testing strategies in accordance with IEC 62304 standards.

- Performed systematic manual testing procedures for infusion pump systems.
- Performed unit testing for defibrillator software components.

Education

M.Eng. Software Engineering	CENFOTEC Univ.	Costa Rica	Jan 2024 - Present
CPSA-F Certification Training	Top Developer Academy	Online	May 2025 - Sep 2025
B.Eng. Electronics Engineering	Hispanoamerican Univ.	Costa Rica	Aug 2015 - Jan 2020

Skills

Programming languages: C, C++, Python, C#
Frameworks / Libraries: Quantum framework (QP/C++), GUIX, .NET
Platforms: Embedded systems, RTOS
Software testing: GoogleTest, Parasoft, pytest
Tools: Git, Jira, Perforce SCM
Methodologies: Agile
Languages: Spanish (native), English (professional)