Steven Martin

Software/System Engineer

CITY AND STATE REMOVED
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semartin.io/professional

Highlight of Qualifications

- Over fourteen years professional experience in software, firmware and embedded systems
- Over six years experience in automotive software (real-time, safety-critical)
- Expertise in C++ and embedded systems with broad range of technical skills
- Certified professional software architect (iSAQB CPSA-F)
- Certified functional safety expert and autonomy safety professional: UL-CFSX (ISO 26262) and UL-CASP (ISO 21448)
- Leads system scoping, planning, architecture and design while engaging internal and external stakeholders
- Extensive experience in digital circuit design
- Embraces new technologies
- Thrives when working with cross-functional teams
- Natural teacher and student
- Equally comfortable with CEOs and junior engineers
- Remote employee since 2019 (up to 10% travel)

Technical skills (partial list)

≥10 yrs	Software and system architecture, C++ (C++11, C++14, C++17), C, Linux, Windows, embedded systems (uC and Linux), unit testing (GoogleTest/Mock), source control (git)
5-10 yrs	Python, HW protocols (I2C, SPI, CAN), Linux userspace device drivers, PlantUML, firmware
2-5 yrs	OpenCV, natural language understanding (NLU), REST, sensors (IMU), hardware debug, computer networking, digital hardware design, CMake, FMEA
1-2 yrs	GPGPU (OpenCL/CUDA), WebSockets, parallel programming, BLE, Linux kernel device drivers, Qt, automated test infrastructure, Docker, Digital Signal Processing (DSP), RTOS, Conan

Professional highlights

Lead Engineering Consultant (Functional Safety)

UL (Software Intensive Systems), Detroit, Remote

September 2021 – Present

- Delivered and created software functional safety training courses (ISO 26262)
- Created/delivered training material for the usage of C++ in safety-critical embedded contexts
- Analyzed coding guidelines including AutoSAR C++ Coding Guidelines and SEI Cert C++, to determine appropriate rule subset for usage in an ISO 26262 context
- Developed processes to achieve functionally safe software for passenger and commercial vehicles
- Developed, elicited, and analyzed requirements and architecture for safety-critical systems
- Led team on various projects, including fulfilling project management functions
- Performed safety-oriented software analyses
- Performed software process ISO 26262 gap analysis and assessments

Senior Software Engineer

SecureCo, New York, Remote

December 2020 – September 2021

- Developed C++ middleware for onion routing based VPN-like platform
- Debugged and patched critical bugs
- Profiled and optimized software bottlenecks
- Configured and deployed software to embedded VPN platforms

Lead Software/System Architect

Jaguar Land Rover, Portland, Remote

April 2017 – November 2020

- Designed and led software implementation of service-oriented architecture that bridges traditional embedded automotive applications to cloud services
- Designed and led software implementation of voice assistant middleware that integrates multiple NLU services while avoiding vendor lock-in and enabling UX designers the ability to rapidly prototype voice interaction for new features
- Worked with stakeholders both domestically and abroad for requirements solicitation and architecture design
- Mentored junior engineers, especially with regards to C++ best practice
- Continued to lead projects after becoming the office's first remote employee in July 2019

Professional highlights (continued)

Lead Engineer
Novus Labs, Beaverton
June 2011 – April 2017

- Responsible for client engagement (internal and external), requirements generation, scoping, design, and implementation for many internal projects and third-party requests (both hardware and software, primarily C++ and C)
- Engaged with clients at various levels of product maturity
- Designed and led implementation of audio/video analysis software that analyzes video feeds in real time using high bandwidth high speed cameras (see https://novuslabs.com/stories/)
- Designed and led implementation of ambient light simulation chamber, which combines optical design, digital hardware design, firmware, and control software
- Frequently tackled unfamiliar technical challenges including machine vision and inertial sensors
- Awarded one patent and applied for a second

Software QA Engineer
Intel Corporation, Hillsboro
April 2010 – June 2011

- Worked within the high-performance computing (HPC) department on the Xeon Phi parallel co-processor (GPGPU–Intel's answer to CUDA)
- Created C++ unit tests that uncovered many bugs in driver stack
- Led effort to integrate "smoke tests" from global teams into the continuous integration build system
- Created and presented an "Introduction to CUDA" class delivered internally to train engineers on CUDA programming model, with examples on parallelization of matrix operations
- Heavily contributed to "best practices" guides, Python testing infrastructure, and continuous integration

Education

2005 - 2012 **Portland State University**
B.S. Computer Engineering
Emphasis in embedded systems, but also studied history, theater arts and English. Accepted to and participated in the MECOP internship program.

Patents

US9906782B2 Source Agnostic Audio/Visual Analysis Framework

Human Stuff

Hobbies

Watching, playing, and creating music, reading, writing, entertaining my toddler, photography, eating, cooking, making electronics, watching movies, biking, climbing, camping, and working on my old 1927 home