

George Vine

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Summary: Curious software engineer with 8 years of experience developing and integrating high-reliability, low latency systems and a master's degree focused on machine learning and computer vision. Specializing in low-level systems programming, distributed systems, and software/hardware co-design. Interested in bringing performance and reliability to the most complex computing problems.

EXPERIENCE

Lockheed Martin Advanced Development Programs

Palmdale, CA

Staff Software Engineer

Oct 2023 – Present

- Acted as Product Owner for 8-person Vehicle Management Systems Platform Team for a multi-billion dollar aircraft development program, responsible for over a dozen custom hardware platforms and associated firmware
- Developed a remote firmware upload and debug system in C/C++ and Python that greatly improved developer experience and decreased firmware upload time by 90%
- Designed critical FPGA-based hardware accelerators in SystemVerilog, implementing digital communications protocols to include RS485/422, JTAG, and MIL-STD-1553
- Architected concurrent and parallel software/hardware systems across a range of distributed systems architectures, including multi-processor, processor and hardware accelerator, and multi-device systems
- Wrote low-level firmware in C/C++ to include DMA-based device drivers, bootloaders, TCP servers, and custom protocol encoders/decoders
- Spearheaded integration of a new ARM SoC including toolchain bring-up, build system development with CMake, and DevOps pipeline design with Jenkins and Gitlab
- Built an FPGA hardware verification system in SystemVerilog, Verilator, CMake, and C++ that increased FPGA IP test coverage by 100%
- Coordinated the reuse of internally developed computing platform hardware and software with 6 independent projects, providing architecture/design consultation, developer training, and project management in the face of competing program priorities

Senior Software Engineer

Oct 2020 – Oct 2023

- Served as chief software architect for a 5-person Java software development team, responsible for service-oriented automated tasking application built on ActiveMQ and Kubernetes
- Prepared and presented numerous software demonstrations to internal stakeholders and third-party customers resulting in research and development funding

Software Engineer

May 2017 – Oct 2020

- Lead a team of 4 in all activities related to software development and hardware design for an autonomous vehicle, from initial design to flight in under 1 year
- Implemented a custom wireless communications system in C/C++ using XBee radios, outperforming vendor range specification by 30%
- Created a native unit test system for flight control software using the Unity embedded unit test framework
- Wrote and presented proposal content focused on hardware in the loop (HWIL) and software in the loop (SWIL) integration and test for a multi-billion dollar aircraft procurement program

NASA Jet Propulsion Laboratory (JPL)

Pasadena, CA

Software Developer (Academic Part Time)

May 2015 – May 2017

- Developed and maintained a Python-based automated test framework for a mission planning tool critical to the Cassini mission at Saturn

TECHNICAL SKILLS

Languages: C/C++, Python, SystemVerilog, Java

Tools: Git, JIRA, Gitlab, Linux Development Environments, CMake, Wireshark, Vivado, Electrical Test and Measurement Tools

Subject Matter Areas: Systems Programming, Distributed Systems, Software/Hardware Integration, TCP/IP Networking, Digital Design and Computer Architecture, Machine Learning

EDUCATION

Georgia Institute of Technology

Atlanta, GA

Master of Science in Computer Science, Focus in Computational Perception and Robotics

Jan 2019 – Dec 2023

Azusa Pacific University

Azusa, CA

Bachelor of Science in Computer Science

Sep 2014 – May 2017