George Vine

george@vine.life | vine.life | github.com/vinegh4 | (818) 808-5435

Experience

Staff Software Engineer, Lockheed Martin Skunk Works – Palmdale, CA Aug 2023 – Present

- Product Owner for Vehicle Management Systems Platform Team for a multi-billion dollar aircraft development program, delivering over a dozen custom hardware platforms and associated firmware and FPGA IP
- Developed a remote firmware upload and debug system in C/C++ and Python that increased firmware upload speed by 90%
- Wrote embedded software in C/C++ to include TCP servers/clients, DMA-based ethernet drivers, bootloaders, and custom protocol encoders/decoders
- Spearheaded integration of a new ARM System on Chip including toolchain bring-up, build system development with CMake, and DevOps pipeline design with Jenkins and Gitlab
- Consulted for 6 independent projects regarding software and hardware architecture for real-time distributed systems
- Built an FPGA IP unit test system in SystemVerilog, Verilator, CMake, and C++ that increased FPGA IP test coverage by 90%
- Designed FPGA IP for various digital communications tasks in SystemVerilog, implementing protocols to include RS485/422, JTAG, I2C, and SPI

Senior Software Engineer, Lockheed Martin Skunk Works – Palmdale, CA Oct 2020 – August 2023

- Served as chief software architect for a 5-person software development team
- Architected a real-time, service-oriented command and control application for autonomous agents
- Developed software services in Java with ActiveMQ
- Spearheaded software demonstration for internal and external stakeholders, securing research and development funding

Software Engineer, Lockheed Martin Skunk Works – Palmdale, CA May 2017 – Oct 2020

- Lead a team of 4 in all activities related to software/FPGA 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%
- Wrote and presented proposal content focused on hardware in the loop (HWIL) and software in the loop (SWIL)

Software Developer Intern, NASA Jet Propulsion Laboratory (JPL) – Pasadena, CA May 2015 – May 2017

- Developed a Python-based automated test framework for a mission planning tool critical to the operation of the Cassini spacecraft

Skills

Languages/Libraries: C/C++, Python, Bash, TCL, SystemVerilog, Java, Numpy, Pytorch

Tools: Git, JIRA, Gitlab, Linux Development Environments, CMake, Wireshark, AMD Vivado, Microchip Libero, Electrical Test/Measurement Tools

Subject Matter Areas: Systems Programming, Embedded Software, Software/Hardware Integration, TCP/IP, Digital Design, Computer Architecture, Devops Automation, Software/Hardware Automated Test, Machine Learning

Education

Georgia Institute of Technology – MS in Computer Science (Computational Perception & Robotics) Dec 2023

Coursework: Machine Learning, Computer Vision, Artificial Intelligence for Robotics, Algorithmic Trading

Azusa Pacific University – BS in Computer Science May 2017