Computer Engineer: Embedded Firmware

Location: Windsor, California

About Micro-Vu

Micro-Vu is an automation company specializing in 3D measuring and robotics. Micro-Vu engineers use technologies such as 3D software, image processing, precision mechanics and motion control, lasers, tactile probes, 3D sensors, machine learning and robotics to develop state-of-the-art solutions.

Micro-Vu designs and manufactures in a highly-automated factory at its campus in Windsor, California near the Russian River. Micro-Vu was established in 1959 and is privately-held. Those who work at Micro-Vu must be highly-motivated, capable and passionate about bringing the best possible products and technologies to the market.

Job Summary

The applicant will be responsible for embedded firmware design and implementation. Tasks may include but are not limited to:

- Design and implementation of bare metal and RTOS-based applications for boards based on ARM Cortex-M3, M4 and A8 processors and SOCs to control smart 3D measurement machines and sensors.
- Implementation of communication between MCUs and other onboard devices such as FPGAs, DRAM, SSDs, port expanders, and flash memory.
- Design and implementation of peripheral communication interfaces and protocols with sensors and accessories over SPI, I²C, CAN bus, Ethernet (TCP/IP, EtherCAT), 1-Wire, and others.
- Development of algorithms for robotics and automation, including trajectory generation, servo control, and LED lighting control.
- Implementation of Windows interfaces and drivers for communication with firmware.
- Consultation for hardware system architecture and design decisions.
- Implementation of industrial communication protocols such as Modbus and EtherCAT.
- Opportunity to implement software cores and to design and debug specialized FPGA cells (Xilinx).
- Opportunity to design electrical and electronic hardware, if interested.

Education

MS or BS in Computer Engineering, Electrical Engineering, or equivalent. PhD considered.

Minimum Qualifications

- Experience and discipline in writing firmware with strong design aptitude
- Comfort with designing and working in complex architectures where timing is critical
- Fluency in the C language, embedded design patterns, and common pitfalls
- Experience with communication protocol design and implementation
- Strong aptitude for computer science, software engineering, architecture, and algorithms
- Proficiency with software development techniques and version control
- Problem-solving ability, quick learning, and attention to detail
- Ability to work independently as well as collaboratively in a team environment

Preferred Qualifications

- Experience with ARM-based SoCs
- Experience with RTOS or real-time Linux and general systems programming
- Experience with Windows development, USB, or TCP/IP
- Understanding of digital signal processing techniques and filters
- Experience with numerical algorithm implementation and analysis
- Experience with FPGA development or Electronic Design Tools (EDA)