

Software Engineer: Embedded/Edge Computation

Location: Windsor, California

About Micro-Vu

Micro-Vu designs automated 3D measuring machines. These machines use 3D software, image processing, precision mechanics and motion control, lasers, tactile probes, and 3D sensors to measure mechanical dimensions on various parts to accuracies of a micron.

Micro-Vu manufactures these machines in a highly-automated factory at its campus in Northern California. Customers purchase Micro-Vu machines to measure their parts for quality control and assurance. Cell phone manufacturers, medical device and aerospace companies, and many smaller industries use Micro-Vu machines in their facilities around the world.

Micro-Vu has 115 employees and is located in Windsor, California near the Russian River. Micro-Vu was established in 1959, and has become a leader in automated 3D industrial measurement. Engineers must be highly-motivated and passionate about bringing the best possible products and technologies to the market.

Job Summary

The applicant will be responsible for algorithm design and implementation on hardware acceleration platforms. Tasks may include but are not limited to:

- Design and implement machine vision algorithms for feature detection, analysis, and pattern matching on embedded edge computation platforms
- Design and implement quasi-real-time sensor data processing to generate 3D point clouds
- Develop sophisticated calibrations for machine vision, touch probe sensor, and non-contact 3D measurement sensors
- Implement machine learning for smart and autonomous measurement system operation
- General software engineering and embedded firmware responsibilities and cooperation
- Work closely with software, firmware, electrical, and mechanical engineers on design requirements and planning

Education

MS or BS in Software Engineering, Computer Science, Computer Engineering, or equivalent. PhD considered.

Minimum Qualifications

- Strong aptitude for machine vision, image processing, and machine learning techniques
- Experience with MKL, ACL, OpenCL, CUDA, or other hardware acceleration frameworks
- Understanding of digital signal processing techniques and filters
- Strong aptitude for computer science, software engineering, architecture, and algorithms
- Proficiency with software development techniques and version control
- Extensive experience with numerical algorithm implementation and analysis
- Problem-solving ability, quick learning, and attention to detail
- Ability to work collaboratively in a team environment

Preferred Qualifications

- Experience with libraries such as TensorFlow, OpenCV, NumPy, LAPACK, R, etc.
- Experience with ARM-based SoCs
- Experience with FPGA-based software development
- Fluency in the C/C++ language, embedded design patterns, and common pitfalls
- Experience in one or more of the following:
 - Computational geometry, geometric fitting, or multiview geometry
 - Point Cloud Library (PCL)
 - LiDAR or other 3D scanning technologies