

Software Engineer Intern: Full Stack

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 application software design, implementation, and maintenance. Tasks may include but are not limited to:

- Develop C# classes and algorithms for a .NET application using Microsoft Visual Studio
- Implement machine vision algorithms for feature detection, analysis, and pattern matching
- Implement trajectory planning, and collision avoidance for machine control and simulation
- Implement machine learning for smart and autonomous measurement system operation
- Develop sophisticated calibrations for machine vision, touch probe sensor, and non-contact 3D measurement sensors
- Develop and design user interface components using WPF and XAML
- Display measurement results with advanced computer graphics technology
- Implement CAD functionality and 3D geometry and point cloud display and manipulation
- Develop unit tests and integration tests under automated testing environment with CI
- Work closely with firmware, electrical, and mechanical engineers on design requirements and planning

Education

Sophomore standing or higher in Software Engineering, Computer Science, or equivalent. Freshmen considered.

Minimum Qualifications

- Experience and discipline with programming languages such as C#, Python, C++ or Java
- 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 collaboratively in a team environment

Preferred Qualifications

- Experience with Windows programming: .NET, WPF and MVC or MVVM
- Experience with OOP design patterns or numerical algorithm implementation
- Experience in a Scrum team environment and understanding of agile principles
- Experience with unit testing frameworks such as NUnit
- Experience with OpenCL, CUDA, or parallel programming
- Experience in one or more of the following:
 - Machine vision, image processing and feature detection
 - Statistical and numerical analysis, linear algebra and differential equations
 - Computational geometry, geometric fitting, or multiview geometry
 - Point Cloud Library (PCL)
 - LiDAR or other 3D scanning technologies
 - Robotics, servomechanisms, control, and embedded hardware
 - Kinematics and path planning
 - CAD and 3D visualization
 - USB, Ethernet, or other hardware communication protocols