Software Engineer: Applied Mathematics

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 data analysis, algorithm design, implementation, and maintenance. Tasks may include but are not limited to:

- Implement machine vision algorithms for feature detection, analysis, and pattern matching
- Develop sophisticated calibrations for machine vision, touch probe sensor, and non-contact 3D measurement sensors
- Perform factor analyses and principal component analyses
- Implement nonlinear regression and integration solvers
- Perform numerical stability and uncertainty analyses
- Implement machine learning for smart and autonomous measurement system operation
- General software engineering responsibilities and cooperation
- Work closely with firmware, electrical, and mechanical engineers on design requirements and planning

Education

MS or BS in Software Engineering, Computer Science, Applied Mathematics, or equivalent. PhD 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
- Excellent understanding of linear algebra and differential equations
- Broad background in applied mathematics techniques and general statistical analysis
- 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 MKL, ACL, OpenCL, CUDA, or other hardware acceleration frameworks
- Understanding of digital signal processing techniques and filters
- Experience with OOP design patterns
- Experience with Windows programming: .NET, WPF and MVC or MVVM
- Experience in a Scrum team environment and understanding of agile principles
- Experience with unit testing frameworks such as NUnit
- Experience in one or more of the following:
    - Machine vision, image processing and feature detection
    - Computational geometry, geometric fitting, or multiview geometry
    - Point Cloud Library (PCL)
    - LiDAR or other 3D scanning technologies
    - Kinematics and path planning