Stephen Grenesko

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https://sgrenesko.github.io/grenesko-site/

SUMMARY

Software and hardware specialist with hands-on experience in computer vision, machine learning, and hardware testing for advanced systems. Developed testing fixtures and diagnostic solutions for LIDAR and electromechanical hardware, ensuring robust system performance. Proven ability to lead R&D projects and optimize AI algorithms for computer vision and robotics applications. Demonstrated proficiency in C/C++, Python, and more to drive innovation in immersive technology solutions.

EDUCATION

University of Pittsburgh, Pittsburgh, PA
B.S., Computer Science

Community College of the Air Force
A.S., Applied Science

WORK EXPERIENCE

Mine Vision Systems   **May 2025 - Present**
Hardware Engineer Tech   *Pittsburgh, PA*
- Directed hardware testing and repair on complex LIDAR and computer vision systems, contributing to improved visual processing and system reliability
- Engineered and constructed testing fixtures to evaluate LIDAR unit degradation and cable connectivity, enhancing diagnostic accuracy
- Diagnosed issues and optimized I2C functionality on compute module and sensor controller boards to support robust data transmission
- Supported production and prototyping of Gen 2 systems, integrating testing feedback into new product development cycles
- Identified root causes of issues in advanced electromechanical systems returned from the field, driving targeted remediation efforts
- Conducted repair work on electrical and mechanical components for computing and sensor hardware, ensuring sustained operational performance
- Utilized both manual and automated testing methodologies to pinpoint hardware faults in embedded systems

University of Pittsburgh - Open Lab   **Aug 2022 - 2025**
Lead Electronics Specialist   *Pittsburgh, PA*
- Provided technical support for 3D printers, laser cutters, and VR systems, minimizing downtime and enhancing user experiences
- Led research and development of computer vision systems for efficient prosthetic manufacturing, applying innovative problem-solving approaches in machine learning
- Managed robotics and IoT Arduino projects, expanding lab capabilities in embedded prototyping and real-time sensor integration
- Assisted over 200 students and faculty in designing and debugging embedded electronic systems, fostering hands-on technical expertise
- Developed a 3D-printed Linux-based info kiosk to streamline information delivery and operational workflows
- Established dedicated soldering stations to improve electronic project throughput and ensure high-quality assembly
- Programmed lab support systems using Java, Python, and BASH scripting to automate daily technical operations

SKILLS

- **Languages/Applications**: Java, Python, C#, C, C++, Embedded C, React, HTML, Javascript, CSS, MATLAB, x86Assembly, Unity, Godot, Arduino, IoT, ESP32, Raspberry Pi, CircuitPython, PowerShell, Vim, Fusion360, AutoCAD, SOLIDWORKS, JupyterLab, MS Office, Adobe Illustrator, EasyEDA, Altium, Jira, OpenCV, PyTorch
- **Technical**: Robotics, Computer Vision, LIDAR, Hardware Testing, I2C, UART, 3D Printing, Laser Cutting, Soldering, PCB Design, PCB Printing, Circuit Design, 3D Design, Automation, Circuit Analysis, Prototyping, Machine Learning, Metal Fabrication, Corrosion Prevention, Structural Repair, Machining, Microcontrollers, FullStack, Back end, Front end, Multimeters, Oscilloscope, CNC Router, Power Supplies, Solder Rework, AR/VR

PUBLICATIONS

- Stephen Grenesko, Abby Zimmerman, et al..Integrated Digital Workflows for Efficient Prosthetic Manufacturing.National Conference of Undergraduate Research, 2025