Wei Cheng Ooh

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Aspiring automation and manufacturing engineer with hands-on experience in computer vision, embedded systems, product engineering, and process optimization through industry internships and applied robotics projects.

Education

Rochester Institute of Technology Rochester, NY
Bachelor of Science in Robotics and Manufacturing Engineering Technology *Aug. 2021 – May 2026*
GPA: 3.81 | Summa Cum Laude

Experience

Product Engineering Intern May 2025 – Oct 2025
Cummins Inc. *Bloomfield, CT*

- Investigated wear and flow restriction issues identified during 700+ hour durability testing of engine valve components; redesigned reset pin geometry to increase flow area and reduce wear at the pin-seat interface, improving long-term reliability
- Refined simulation processes for 1/16 and 1/8 inch National Pipe Thread plugs by integrating physical test results with finite element analysis, leveraging precision test tube design and coordinate measuring machine to improve accuracy and remove thread modeling needs
- Designed and evaluated mechanical, hydraulic, and electrical solutions to optimize braking and exhaust valve sequencing, improving system reliability and operational performance

Research Assistant Jan 2025 – May 2025
Additive Bio-manufacturing Research Lab, Rochester Institute of Technology *Rochester, NY*

- Developed and deployed image-based analysis tools to quantify hydrogel-to-metal adhesion performance, enabling systematic evaluation of surface roughness and heat-treatment effects
- Revamped research protocols through the automation of image normalization and two-dimensional surface roughness calculations in Python with OpenCV and Pandas, achieving an 80% decrease in processing time and markedly improving data visualization

Mechanical and Manufacturing Engineering Intern Jan 2024 – Aug. 2024
Inficon *Syracuse, NY*

- Reduced assembly time by 67% and improved operator consistency by designing and implementing a pin-and-lock fixture, supporting process optimization and standardized work instructions
- Decreased rework and scrap rates by implementing Poka-Yoke error-proofing solutions, driving continuous improvement in assembly quality and reducing process variability
- Enhanced operational efficiency and standardization in Class 1K and 10K cleanroom environments by leading 5S audits, identifying process waste and non-compliance, and implementing corrective actions to support Lean Manufacturing and process optimization

Projects

Electronic Component Sorting System | *Computer Vision, System Integration, Embedded System* Spring 2026

- Led development of a computer vision–based automated sorting system by selecting and training a YOLOv8 model on 3,000+ labeled images across four classes, achieving about 99% precision and recall with 95% mAP@50 for accurate real-time classification
- Designed and integrated a sensor-driven automation workflow using a through-beam photoelectric sensor and Arduino Mega to trigger image capture, processing, and motor control, enabling synchronized real-time operation without manual intervention

Technical Skills

Mechanical & Design: SolidWorks, Fusion360, Siemens NX, PTC Creo, GD &T, ANSYS, MATLAB
Robotic & Automation: Control Systems, PLC Programming (Allen-Bradley / Studio 5000), System Integration, Sensor Integration, Embedded Systems, Real-Time Control Systems, Microcontroller Programming (Arduino), Process Automation, Computer Vision (YOLOv8), Object Detection, Python, C++, RobotStudio, OptixStudio HMI, Factory IO
Manufacturing & Quality: Six Sigma Green Belt, Lean Manufacturing, Statistical Process Control, Minitab
Miscellaneous: Microsoft Excel, Windchill, TeamCenter PLM, PTC MathCAD, Engineering Equation Solver

Relevant Courses

Advanced Auto Systems and Control, Fluid Power and Heat Transfer, Robots and Automation, Quality Engineering Principles, Lean Production and Global Supply Chain Operations, Integrated Design for Manufacturing and Assembly, Mechanics for Mechatronics, Electronics Manufacturing, Automation Control Systems, Principles of Statics