Ryan Kim

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Open to relocation and nationwide travel opportunities

Technical Skills

Mechanical Design: SolidWorks (parts, assemblies, drawings), GD&T (ASME Y14.5–2018, basic), DFM for machining/fabrication, basic tolerance stack-ups, sheet metal fundamentals, reverse engineering from legacy CAD
Prototyping & Assembly: Rapid prototyping, FDM 3D printing, bench assembly, fit/clearance checks, hardware/fastener selection
Programming: Python (OpenCV), C++, MATLAB, Simulink
Analysis: Basic FEA in SolidWorks; kinematics modeling in MATLAB
Testing & Documentation: Basic inspection (calipers), ImageJ, microscopy, engineering documentation

Experience

Robomekanics (OEM-Backed by Wild Iron) Nov 2025 – Present
Mechanical Engineer *Teterboro, NJ*

- Redesigning production hardware for the MoleIQ pallet-handling robot with emphasis on manufacturability, machining constraints, and assembly sequence.
- Developing production-ready SolidWorks parts, assemblies, and drawings with clear design intent and tolerance control.
- Authoring ASME Y14.5–2018–compliant drawings defining datums, position/profile tolerances, and functional fits.
- Applying DFM to reduce part count, simplify geometry, and tighten tolerance stack-ups for repeatable fabrication.
- Managing part inventory and production components to support builds, revisions, and manufacturing release.

Education

Northeastern University Boston, MA
Master of Science in Mechanical Engineering *Incoming Fall 2026*

Rutgers University, School of Engineering New Brunswick, NJ
Bachelor of Science in Biomedical Engineering *Conferred May 2025*

Projects

3D-Printed Ultralight Pump November 2025 – January 2026
Personal Project *Self-Directed*

- Designing an ultralight, packable air pump for backpacking applications using an off-the-shelf PC blower fan as the core air-moving component.
- Developing parametric SolidWorks housings, ducts, and interfaces to adapt the blower fan for efficient airflow and sealing.
- Achieved a base body mass of 18 g with interchangeable nozzles at approximately 4 g each through geometry optimization and material selection.
- Inflated a medium-sized sleeping pad in approximately 12 minutes, prioritizing low power draw and minimal mass over inflation speed.

ParaSwing – Robotic Golfing Attachment Sep 2024 – May 2025
Capstone Design Project *Rutgers University*

- Performed SolidWorks modeling and FEA to assess loading during swing impact and reinforce actuator mounts.
- Designed, 3D printed, and assembled mechanical subsystems for rapid prototyping.
- Integrated electrical and control components into a mechatronic system.
- Modeled swing kinematics in MATLAB to verify consistency.

Surgical-Inspired Robotic Arm Aug 2025 – Present
Personal Project *Self-Directed*

- Building an affordable robotic arm intended to mimic precise human arm movements through teleoperation.
- Designing multiple joints and linkages to reproduce key arm motions.
- Using differential gear sets for joint actuation and Bowden cables to drive a small end-effector gripper.
- Developing and prototyping the system in SolidWorks, C++, and 3D-printed components.

Real-Time Face Recognition with OpenCV May 2025 – Present
Personal Project *Self-Directed*

- Developed a Python desktop tool for real-time face detection and recognition using OpenCV.
- Built an enrollment workflow for capturing faces and generating encodings.
- Created an on-screen interface with labels, confidence scores, and user management.