Ryan Kim

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Open to relocation and nationwide travel opportunities

Technical Skills

Design & Prototyping: SolidWorks (3D Modeling, Drawings, FEA – Thermal/Structural, **CSWA – Mechanical Design Certified**), 3D Printing (FDM), Rapid Iteration, Mechanical Assembly
Programming: Python (OpenCV), C++, MATLAB, Simulink
Testing & Tools: Instron Bluehill, ImageJ, Spectrophotometry, Environmental Testing (Shock/Vibration/Thermal), Microsoft Office

Experience

Surgical-Inspired Cable-Driven Gripper Aug 2025 – Present
Personal Project *Self-Directed*

- Fabricated using SolidWorks and FDM 3D printing.
- Designed a precision cable-driven mechanism in SolidWorks with tight tolerance fits (0.1–0.2 mm) to ensure smooth actuation.
- Applied additive manufacturing principles to achieve consistent, low-cost, and repeatable rapid prototyping.
- Programmed C++ control logic and integrated inverse kinematics for robotic arm manipulation.

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

- Performed SolidWorks modeling and FEA (thermal/structural) to assess loading during swing impact and reinforce actuator mounts.
- Designed, 3D printed, and assembled mechanical subsystems for rapid prototyping and functional testing.
- Integrated electrical and control components into a mechatronic system to synchronize actuation and motion.
- Modeled swing kinematics in MATLAB to analyze motion profiles and verify consistency across tests.

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

- Developed a Python/OpenCV-based tool for real-time face detection and recognition from webcam input.
- Implemented image encoding, matching, and bounding-box visualization for live identification of multiple users.
- Optimized recognition reliability through dataset tuning and iterative software testing.

Education

Rutgers University, School of Engineering New Brunswick, NJ
Bachelor of Science in Biomedical Engineering *Conferred May 2025 — **Major GPA: 3.1***

Additional Experience

Best Home Fashion Closter, NJ
Quality Assurance Assistant *May 2023 – Sep 2024 (Seasonal Employment)*

- Performed visual and dimensional inspections of textile products to ensure proper sizing and defect-free quality.
- Documented inspection results and communicated product issues to the production and management teams.
- Maintained organized workflow and attention to detail in a fast-paced quality control environment.

Lamont-Doherty Earth Observatory, Columbia University Palisades, NY
Research Assistant *Summer 2021*

- Conducted research on the persistence of microplastics in commercial laundry detergents following regulatory bans.
- Used microscopy and fluorescence analysis to detect and quantify microplastic particles across product samples.
- Recorded results and collaborated with research staff to support ongoing environmental impact assessments.