Ryan Kim

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Open to relocation and nationwide travel opportunities

Career Objective

Aspiring mechanical and biomedical engineer seeking opportunities in medical devices, robotics, and advanced manufacturing. Motivated to contribute in design, prototyping, and problem-solving roles with growth potential.

Technical Skills

Design & Prototyping: SolidWorks (3D Modeling, Drawings, FEA – Thermal/Structural, **CSWA – Mechanical Design Certified)**, DFA and DFM, GD&T, 3D Printing (FDM), Rapid Iteration, Mechanical Assembly
Programming: Python (OpenCV), C++, MATLAB, Simulink
Testing & Tools: Microscopy, Instron , 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*

- Built a Python desktop tool using OpenCV and the face_recognition library to detect and identify users from a live webcam feed.
- Created an enrollment workflow that captures faces, generates encodings, and saves them as .pkl files for persistent recognition.
- Designed a clean on-screen interface showing the camera feed, name labels, confidence scores, and options to add or delete registered users; included automatic installation checks for required dependencies.
- Achieved real-time performance around 15 FPS with multi-face detection, error handling, and stable recognition under varied lighting conditions.

Education

Rutgers University, School of Engineering New Brunswick, NJ
Bachelor of Science in Biomedical Engineering – Understanding of engineering first principles *Conferred May 2025*

Additional Experience

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.

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.