

Yunsoo Adrienne Yoon

(253) 553-7445 OR +8210 5580-4452 • adrienneyoon2027@u.northwestern.edu

EDUCATION

Northwestern University | Evanston, IL

Sep 2025 – Dec 2026

M.S. in Mechanical Engineering with a focus on Robotics and Controls

Cornell University | Ithaca, NY

Aug 2021 – May 2025

B.S. in Mechanical and Aerospace Engineering

GPA: 3.79/4.0, Graduated Magna Cum Laude

HONORS AND AWARDS

Presidential Science Scholarship

2020 – 2025

- \$200,000 scholarship granted to 20 Korean students in science, technology, engineering, mathematics majors by the President of South Korea

Cornell University Engineering Learning Initiatives (ELI) Undergraduate Researcher Award

2024

- \$5,400 grant for undergraduate research at Cornell University

Cornell Engineering Dean's list

2021 - 2024

RESEARCH EXPERIENCE

Northwestern University, HAND ERC | Evanston, IL

Sep 2025 – Dec 2026

Graduate Researcher

Advisor: Dr. Kevin Lynch

- Developing a haptically transparent glove for motion capture and robotic hand training, focusing on high coverage, compliance, and contact sensing.
- Conducting a literature review on state-of-the-art tactile sensing mechanisms and motion-tracking systems to inform glove design.
- Collaborating with MIT and FAMU to integrate the glove into a robotic training framework, enabling robots to learn from human grasp patterns.
- Evaluating sensing fidelity and compliance trade-offs to optimize glove usability for **human-in-the-loop** robotic learning.

Cornell University, Haptics Robotics Lab | Ithaca, NY

Jun 2024 – May 2025

Undergraduate Researcher

Advisor: Dr. Cara Nunez

- Developing a self-powered wearable suit that converts pneumatic energy from walking into electrical energy for haptic sensing and actuation.
- Designing a compliant mechanism for the suit, focusing on efficient energy transmission through elastic materials.
- Characterized and prototyped an axial flux magnetic generator outlined by mentor, optimizing power output through the integration of a Halbach array to enhance magnetic flux by ~210%.
- Awarded funding through Cornell ELI grant for materials and equipment for iterative design.
- Submitted a report to ELI, summarizing the progress made over the summer.
- Added 6 hours of work per week during the semester.

Smart Blood Pressure Measuring Device

Jan 2024 – May 2024

- Co-designed and developed a blood pressure monitoring system in collaboration with Cayuga Health, a local healthcare provider, transmitting data via Long Range Wide Area Network (LoRaWAN) to hospitals in isolated areas.
- Integrated a commercial Bluetooth blood pressure monitor with a custom-built data transmission system using Arduino.
- Featured in *The Cornell Chronicle* for innovative healthcare application using Internet of Things.

PRESENTATIONS

ELI Poster Presentation | Ithaca, NY

Apr 2025

- Presented at the Cornell ELI poster session, sharing progress made with funding support to a broad research audience at Cornell University.

TEACHING EXPERIENCE

TEACHING ASSISTANT, Cornell University

Aug – Dec 2024

- Prepared and lead lab sessions, office hours, course discussion boards, and graded lab reports for MAE 3260: System Dynamics.
- Collaborated with course instructors in weekly meetings to improve student engagement and address common challenges.
- Added 6 hours of work per week during the semester.

ACADEMIC EXCELLENCE WORKSHOP FACILITATOR, Cornell University

Jan – May 2023

- Prepared worksheets and lead collaborative workshops for MATH 1920: Multivariable Calculus for Engineers.
- Encouraged active learning to help students better understand course material, as well as fostering teamwork and communication skills.
- Added 6 hours of work per week during the semester.

ACTIVITIES AND LEADERSHIP

Cornell Electric Vehicles | Cornell University

Sep 2021 – May 2025

Drivetrain and Manufacturing Lead

- Working in a team of 50+ students to design, manufacture, and test an energy efficient, battery electric vehicle for the Shell Eco-Marathon Urban Concept Competition.
- Collaborated with peers to design the drivetrain of an electric vehicle, spearheading a shift from a mechanical differential to a shaft motor directly connected to each rear wheel to improve efficiency in torque transmission from ~26.3 to ~86%.
- Oversaw the manufacturing process of the team, scheduled machining shifts, organized machine shop training for new members, and proofread shop drawings.
- Previous member of the chassis team, collaborated with 7 peers in designing and manufacturing the chassis of the vehicle, considering aerodynamics, safety, and weight.
- Led comprehensive design reviews and authored detailed project reports every semester for clear communication of progress.
- Added 9+ hours of work per week during the semester.

College Mentors for Kids (CMFK) | Cornell University

Feb 2022 – Dec 2023

Fundraising chair and Mentor

- Organized and managed fundraising events, raising awareness and financial support for higher education programs for local children.
- Designed flyers and posters to promote fundraising events.
- Mentored elementary school students in weekly activities focused on education and career exposure.
- Added 4 hours of work per week during the semester.

PROFESSIONAL EXPERIENCE

BALA Consulting Engineers | New York, NY

Jun – Aug 2023

HVAC Mechanical Intern

- Ran equipment simulations using IES Virtual and validated them through hand calculations.
- Developed AutoCAD plans for building renovations and improved design efficiency by creating documentation reflecting updated building codes.

PROFESSIONAL SKILLS

Software: ROS, Linux, Python, Arduino IDE, MATLAB, AutoCAD, Autodesk Inventor, Fusion 360, ANSYS, Adobe Illustrator, Microsoft Office

Manufacturing: Manual Mill, Manual Lathe, Engineering Drawings, Computer-Aided Manufacturing, 3D Printing

Foreign Languages: English (Native), Korean (Native)