Yunting Catherine Guo

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Objective

Aspiring engineering student with a strong foundation in design, prototyping, and testing. Passionate about mechanical systems, robotics, and medical device innovation, with hands-on experience in CAD modeling, machining, and circuit integration. Eager to contribute to projects that combine creativity and engineering precision.

Education

Cornell University *Expected Graduation: May 2027*
Bachelor of Science in Mechanical and Aerospace Engineering
GPA: 3.84/4.0

Ridge High School *Graduation: June 2023*
High School Diploma

Skills

- **Software:** Autodesk Fusion 360, SolidWorks, LTspice
- **Programming:** Python, MATLAB, Java, C, Verilog
- **Tools:** 3D Printing (resin & filament), Laser Cutting, Machining (Lathe, Mill, Drill Press), Soldering
- **Laboratory:** Wet Lab Techniques, Lateral Flow Assay Testing, Colorimetric & Fluorescence Assays

Projects

Erickson Lab @ Cornell - Diagnostic Device Design

Undergraduate Researcher, Cornell University

- Designed and iteratively prototyped over 300 single- and triple-strip Lateral Flow Assay (LFA) cassettes using resin 3D printing
- Validated cassette designs through colorimetric assays (FeverPhone: EBOV, MARV, LASV) and fluorophore assays (PoCBreCa: PR, ER, HER2)
- Developed commercial cassette tray (BioTracking) to integrate commercial LFA strips into custom imaging devices
- Currently designing double-strip cassette system for ReproPhone project focused on reproductive health diagnostics
- Generated technical engineering drawings and figures in Fusion 360 to support graduate research documentation and publications

Cornell University Solar Boat - Hull

Designed and fabrication of composite structures for a solar-powered boat

- Lead design and fabrication of composite hull optimized for hydrodynamic efficiency and structural integrity for annual competition
- Built and tested prototype hull using plywood, fiberglass, and resin to assess strength, surface finish, and water performance

- Designed and installed new cable-actuated steering system integrating mechanical linkages with rudder assembly for precise boat control
- Collaborated with Drivetrain and Solar subteams to successfully integrate steering mechanism with propulsion system and solar panel mounting
- Managed subteam workflow, material procurement, and fabrication schedule to meet competition deadlines

ENGRI 1170 Final Project - Autonomous Car Design

Designed, modeled, and fabricated a small-scale autonomous car within budget constraints

- Designed, modeled, and fabricated small-scale autonomous vehicle chassis in Fusion 360 within strict budget constraints
- Self-taught CAD software and applied laser-cutting techniques for precision acrylic chassis fabrication
- Optimized weight distribution for stability and selected motors based on performance testing
- Integrated sensors, motor drivers, and Arduino-based control circuitry for autonomous navigation
- Collaborated in team of four to assemble, debug, and successfully demonstrate working prototype

Work Experience

Cornell University - Teaching Assistant

August 2024 - Present

- Lead weekly lab sessions for Introduction to Circuits for Electrical and Computer Engineers course with self-drafted teaching materials for 30+ students
- Provide office hours support to clarify lecture concepts, troubleshoot circuit designs, and guide lab work
- Grade and provide detailed feedback on 100+ homework assignments, lab reports, and exams per semester

JNY RE LLC - Backend Development Intern

June 2024 - August 2024

- Developed web application with interactive widgets to streamline landlord property management and improve user experience
- Implemented live tracking system for 110+ tenants' rent balances, payment schedules, and transaction history
- Applied Python (Pandas, Piecash) to parse and optimize GnuCash financial data for automated tenant reporting

Extracurricular Activities

Cornell Archery Club - Treasurer

September 2023 - Present

- Manage club budget, process reimbursements, and coordinate equipment purchases
- Practice twice weekly on 20-yard lanes to develop precision, focus, and proper shooting technique
- Instruct 30+ new members on safety protocols, stance, draw, and release techniques
- Lead outreach initiatives to increase campus visibility and recruit new members

References

Available upon request.