

CHARMAINE GUO

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EDUCATION

Northwestern University B.S. in Materials Science & Engineering	June 2028 Overall GPA: 3.25/4.00
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SKILLS

Computer Languages	Python, Java, MATLAB, HTML, CSS
Soft Skills	Project Management, Teamwork, Time-Management, Adaptability
Hard Skills	Lab Safety, Capillary Rheometer, SEM, Spectrometer, ICP
Organizational Tools	Microsoft Excel, Google Drive

EXPERIENCE

Undergraduate Researcher <i>Northwestern University</i>	October 2024 - Present Evanston, IL
<ul style="list-style-type: none">· Collaborating with a PhD candidate on cellulose crystalline research, focusing on color formation without dyes.· Studying how UV light cures acrylic acid, solidifying cellulose crystals and creating structural colors· Analyzing using MATLAB how varying cellulose concentrations affect crystal arrangements and resulting colors.	
Engineer Intern <i>Weston Department of Public Works</i>	June 2024 - August 2024 Weston, MA
<ul style="list-style-type: none">· Transferred water pipe data from hand-drawn maps into a GIS-based system, improving online access and organization.· Identified five roads with lead pipes, leading to successful excavation and replacement.· Assisted with water treatment operations, gaining hands-on infrastructure experience	
Architectural Intern <i>Maple Hill Architects</i>	June 2022 - Feb 2023 Wayland, MA
<ul style="list-style-type: none">· Created 3D models in SketchUp for active and future residential projects, enabling clients to better visualize architectural concepts and design plans.· Contributed to interior design layouts and space planning, providing practical and aesthetic insights to ongoing projects.· Modeled a full renovation plan for a residential property, including an energy-efficient greenhouse extension.	

PROJECTS

Purrfect Care <i>Python, PyQt5, Gemini API</i>	Desktop (WildHacks) March 2025
<ul style="list-style-type: none">· Built a PyQt5 desktop app with wellness reminders, to-do list, and animated notifications.· Integrated Gemini API for contextual chat with a virtual assistant cat.	
Skynet System <i>Onshape, Arduino IDE, ESP32</i>	Team Project (Design Thinking & Communication) Jan - March 2025
<ul style="list-style-type: none">· Designed solutions for remote zoo access, with prototypes including an interactive online tour prototype built with web technologies and a Hexbug like design.· Final deliverable: a zipline-mounted camera system enabling live video feed controlled remotely by users.	

EXTRACURRICULAR ACTIVITIES

Finance Lead <i>Society of Asian Scientists and Engineers (SASE)</i>	January 2025 – Present
<ul style="list-style-type: none">· Organizing fundraisers and managing financial operations, budgeting, and expense tracking.· Writing grants and collaborating with the club to ensure efficient financial planning and resource allocation.	
Power Distribution Management <i>Northwestern Formula SAE (NUFSAE)</i>	October 2024 – Present
<ul style="list-style-type: none">· Working on the electrical systems team to design the back box harness and build the top hoop harness.· Collaborating with the accumulator team to design the low voltage battery box.· Learning and applying software like Altium, SolidWorks, and RapidHarness.	