

CHARMAINE GUO

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EDUCATION

Northwestern University

B.S. in Materials Science & Engineering

Overall GPA: 3.25/4.000

June 2028

SKILLS

Computer Languages

Python, Java, MATLAB, HTML, CSS

Soft Skills

Project Management, Teamwork, Customer-oriented, Adaptable

Hard Skills

Laboratory work, Research Design, Lab Safety, Capillary Rheometer, Osmium Coater, Spectrometer, ICP

Organizational Tools

Microsoft Excel, Google Drive

EXPERIENCE

Undergraduate Researcher

Northwestern University

October 2024 - Present

Evanston, IL

- Collaborating with a PhD candidate on cellulose crystallization 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

Weston Department of Public Works

June 2024 - August 2024

Weston, MA

- Analyzed and documented water pipe materials and diameters from hand-drawn maps
- Meticulously entered data into a new management system with a focus on GIS application.
- Studied and maintained the town's water distribution system, including public and private water lines and meters.
- Supported water treatment plant analysis and operations, gaining practical knowledge of water infrastructure.

Architectural Intern

Maple Hill Architects

June 2022 - Feb 2023

Wayland, MA

- Studied real-life applications of a home design process
- Completed models of current and future houses for clients using Sketchup.

EXTRACURRICULAR ACTIVITIES

Northwestern Formula SAE (NUFSAE)

Power Distribution Management

October 2024 - Present

- 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.
- Contributing to team milestones and ensuring technical goals align with deadlines.

McCormick Student Advisory Board (MSAB)

Project Development Team

January 2025 - Present

- Assisting in organizing departmental events to connect students with faculty and industry professionals.
- Providing input on academic initiatives and fostering a collaborative environment for Northwestern McCormick School of Engineering students.

Tikkun Olam Makers (TOM)

January 2025 - Present

- Collaborating with a team to design and prototype affordable, durable switch-adapted toys for children with disabilities.
- Partnering with the Park School to develop accessibility solutions for students aged 5-21 with cognitive and motor impairments.
- Utilizing engineering, design, and rapid prototyping skills to create user-friendly assistive devices.

Society of Asian Scientists and Engineers (SASE)

Finance Lead

January 2025 - Present

- 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.