

CHARMAINE GUO

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EDUCATION

Northwestern University
B.S. in Materials Science & Engineering
Overall GPA: 3.031

June 2028

EXPERIENCE

Northwestern University
Research Aide

October 2024 - Present
Evanston, IL

- Collaborating with a graduate student 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.

Northwestern University
Swim Instructor

October 2024 - Present
Evanston, IL

- Energetically customizing instruction strategies based on knowledgeable evaluations of students' abilities.
- Maintaining participant progress by offering regular feedback and technique suggestions.
- Leading 5 swim classes per week for over 25 total participants.

Weston Department of Public Works
Engineer Intern

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.

SKILLS

Computer Languages	Python, Java, MATLAB, HTML, CSS
Soft Skills	Project Management, Teamwork
Laboratory work	Research Design, Lab Safety, Capillary Rheometer, Centrifuge, Speedmixer, ICP
Organizational Tools	Microsoft Excel, Google Drive

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

October 2024 – 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)

October 2024 – Present

- Using engineering, design, and rapid prototyping skills to develop low-cost solutions to real-world challenges.
- Participate in hackathon-style events to build functional prototypes and present outcomes to stakeholders.

Northwestern Water Polo Club

October 2024 – Present

- Participating in weekly practices and team tournaments to develop teamwork and athletic skills.
- Supporting recruitment efforts and organizing club activities to enhance team dynamics.