

CHARMAINE GUO

Wayland, MA 01778 & Evanston, IL 60201
(407) · 820 · 7755 ◊ guo.charmaine.cg@gmail.com
Website: charmaineguo.com

EDUCATION

Northwestern University
B.S. in Materials Science & Engineering
B.S. in Data Science

June 2028

SKILLS

Computer Languages	Python, Java, MATLAB, HTML, CSS
Soft Skills	Project Management, Teamwork, Time-Management, Adaptability
Hard Skills	Research Methods, Data Collection, 3D Printing, SolidWorks
Organizational Tools	Microsoft Excel, Google Drive

EXPERIENCE

Undergraduate Researcher — Schuh Group
Northwestern University

Jan 2026 - Current
Evanston, IL

- Synthesizing zircon (ZrSiO₄) coatings on micron-scale sand particles using the Pechini method, leveraging polymerizable precursors to ensure precise stoichiometric control and chemical homogeneity.
- Refining sol-gel processing routes by adjusting citric acid to ethylene glycol ratios, improving the stability of the resin precursor for more consistent particle encapsulation.

Student Tech Aide
The Garage

September 2025 – Present
Evanston, IL

- Manage makerspace operations and inventory for 3D printers, CNC, and woodworking tools, utilizing data-informed logistics to ensure equipment uptime and optimal material stock levels.
- Facilitate resident fabrication by translating complex project requirements into technical workflows, providing expert guidance on additive and subtractive manufacturing techniques and safety.

Quality Intern
Littelfuse

June 2025 - August 2025
Beverly, MA

- Engineered a centralized data repository using Power Query to automate the ETL process for 300+ legacy quality reports, standardizing disparate data formats into a relational structure.
- Architected a multi-parameter search engine by indexing part numbers, package types, and leadframe variables, enabling instantaneous data retrieval and cross-functional visibility.
- Optimized data retrieval latency, reducing mean search time from several hours to under 60 seconds (a 95

PROJECTS

Purrfect Care
Python, PyQt5, Gemini API

Desktop (WildHacks)
March 2025

- 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
Onshape, Arduino IDE, ESP32

Team Project (Design Thinking & Communication)
January - March 2025

- Designed solutions for remote zoo access, with 3d printed 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

Low Voltage Team
Northwestern Formula SAE (NUFSAE)

October 2024 – Present

- Engineered the vehicle's Power Distribution Module (PDM) using Altium Designer, overseeing the full schematic capture and PCB layout process.
- Developing comprehensive wiring harness specifications, including connector selection, pinout mapping, and signal integrity routing.
- Leading technical onboarding for new members by delegating design tasks and conducting training sessions on RapidHarness and industry-standard documentation.