Sophia Schiffer

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5541 S Everett Ave, Apt. 811, Chicago, IL 60637

EDUCATION

Northwestern University   **Evanston, Illinois**
Bachelor of Science in **Mechanical Engineering**   Anticipated June 2024

GPA: 3.740/4.000

Relevant Coursework: Mechatronics, Feedback Control Systems, Introduction to Artificial Intelligence, Active Learning in Robotics, Embedded Systems in Robotics, Artificial Life, Machine Learning, Robotic Design Studio (Capstone)

EMPLOYMENT & PROJECTS

Guest Engagement Facilitator 1   **Chicago, Illinois**
Griffin Museum of Science and Industry   June 2024 – Present
- Provide informal education and demoes to museum guests on storms, electricity, and technology
- Facilitate guided tours of the U-505 (WWII German U-boat), explaining the boat's history and machinery

Interactive & Emergent Autonomy Lab   **Evanston, Illinois**
Active Control for WALTER Soft Robot   July 2022 – June 2024
- Tuned primitive walking gaits for automated tree-search learning of legged locomotion with 4-minute training time
- Implemented RRT-based path planner for obstacle navigation in simulation

Publication: Ketchum, Jake, Sophia Schiffer, Muchen Sun, Pranav Kaarthik, Ryan Landon Truby and Todd D. Murphey. "Automated Gait Generation For Walking, Soft Robotic Quadrupeds." *ArXiv* abs/2310.00498 (2023): n. pag.

Focal Point, LLC   **Chicago, Illinois**
Mechanical Engineering Internship Projects   June 2023 – August 2023
- Developed step light for hospital room meeting even distribution and low 40-lumen output requirements
- Collaborated with intern team to provide solution for in-field adjustable stem mounts, eliminating 1-month lead time

Downlight Team and Other Contributions   June 2023 – August 2023
- Prototyped and developed ceiling cover shrouds for recessed narrow-beam downlights with high tilt angles up to 40°
- Modeled and designed rotational casting machine with 80/20 framing for in-house casting of hollow spherical lenses

Autonomous Pin Shooter Capstone Project   **Evanston, Illinois**
Systems Integrator   November 2023 – December 2023
- Designed robust AprilTag tracking pipeline for detecting precise placement of Nerf Modulus Blaster
- Implemented MoveIt2 motion planning to grasp and place Nerf guns with Franka Emika Panda robot

SKILLS

- **Programming:** Python, MATLAB, C, C++, ROS/ROS2
- **Engineering Software:** SOLIDWORKS, Fusion360, Ansys (FEA), Arduino, Siemens NX, Oracle
- **Shop:** Band Saw, CNC, Drill Press, Lathe, Mill, 3D Printer, Sand Casting, Sewing Machine
- **Design:** Design for Manufacturing, Injection Molding, Sheet Metal, Design for Aesthetics, LED Lighting
- **Creative Software:** Inkscape, Adobe Photoshop, Digital Audio Workstations (FL Studio)

LEADERSHIP

Northwestern Club Spikeball Marketing Executive, 2023-2024 Wildcat Welcome Peer Advisor, Catholic Students Association Service Senator