

Chelsea Sun

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EDUCATION

University of Michigan, Ann Arbor

B.S.E. in Naval Architecture and Marine Engineering
Minor in Computer Science

May 2025

GPA: 3.98/4.00

WORK EXPERIENCE

PacMar Technologies

Ann Arbor, MI

Engineering Intern

May 2023 - August 2023

- Identified bottlenecks in a Robot Operating System (ROS2)/Unreal Engine autonomous ship simulation by developing Python and C++ code to measure message latency, improving simulation performance and reliability
- Integrated autonomous control software into Gazebo simulation for comprehensive testing and debugging, and incorporated genetic algorithm to fine-tune PID tuners in order to optimize robot path following performance
- Shared weekly progress with principal investigator and team members, and received guidance on future steps

3Dent Technology, an Ocean Power Technologies subsidiary

Houston, TX

Offshore Engineering Intern

June 2022 - August 2022

- Developed VBA code for instant safety evaluation of jack-up going-on-location, saving operational time and adding failure prevention
- Summarized complex crabbing angle calculations into clear and concise technical reports for client
- Corresponded with client to render 3D model of their conceptual ocean thermal energy converter in Rhino
- Automated consolidation of data from 1000+ CSV files, increasing efficiency in ship stability calculations

RESEARCH & PROJECTS

Naval Engineering Education Consortium (NEEC) Acoustics Research Team

January 2023 - Present

Undergraduate Researcher

- Investigated vibrational patterns of metal sheet impacts to simulate structural vibrations of navy ship walls
- Analyzed microphone and accelerometer data from steel ball impacts on metal sheet using MATLAB
- Built machine learning algorithm for accurate identification of steel ball size

UM::Autonomy, Student Project Team (Autonomous Boat)

September 2022 - Present

Mechanical Sub-team Member | Business Sub-team Member

- Optimized placement of horizontal beams on hull to minimize bending stresses and manufacturing time
- Collaborated with team of 9 to fabricate carbon fiber hull using vacuum infusion and wet layups
- Guided preparation of composite molds, and manufactured aluminum components of projectile launcher
- Oversaw timely completion of team video and technical report for competition submission over a 5-week timeline, by developing report outline, allocating tasks, and consistent communication

LEADERSHIP & ACTIVITIES

Society of Women Engineers, University of Michigan Chapter

August 2021 - Present

Marketing and Membership Director | 2023 Career Fair Operations Chair

- Managed team of 8 responsible for coordinating external marketing initiatives and internal social events
- Organized largest career fair on campus, Fall Engineering Career Fair, in 2022 and 2023; oversaw day-of logistics, and achieved 10,700% increase in website traffic through new marketing strategies
- Conducted comprehensive inventory of supplies, establishing organization system for easy material access

SKILLS & INTERESTS

Programming: C++, Python, MATLAB, VBA, Julia, ROS/ROS2, HTML, Git

Software: Rhino, GHS, AutoCAD, NASTRAN (Finite Element Analysis), Microsoft Office (Excel), Adobe Illustrator

Manufacturing: Mill, Soldering Iron, Waterjet, Welding, Drill Press, Paint Spray Gun

Interests: Tennis, Soccer, Card Games, Painting, Art Museums, Learning New Recipes