

Robert Marlow

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EDUCATION

University of Wisconsin-Madison

Bachelors of Science, Mechanical Engineering, expected May 2025

- GPA: 4.0/4.0 Dean's List (5/5 Semesters)
- Coursework: Dynamic Systems, Fluid Dynamics, Robotics, Mechatronics, Data Science Programming

ENGINEERING EXPERIENCE

Engineering Intern, Triton Medical Robotics, May - August 2023

- Refined product demonstration equipment while gaining experience with pneumatic control and instrumentation
- Designed test fixtures and performed 2000+ trials to measure behavior of endoscopes and components, incorporating water-resistant components and design strategies to enable future characterization in submerged environments
- Validated new test methods by conducting statistical analysis of new and historical data for composite catheters
- Streamlined device testing through ergonomic fixturing and automation of data processing, enabling faster iteration

Volunteer Mechanic, Silicon Valley Bicycle Exchange, May - August 2022

- Diagnosed and refurbished donated bicycles to be distributed through local charities, gaining 100+ hrs of experience troubleshooting cable actuated systems, chain drives, and bearings
- Mentored groups of underserved high school students in bike maintenance through the GetSET STEM program

Robotic Arm Project, Wisconsin Robotics

- Collaborated on an interdisciplinary team to prototype a humanoid 3-dof robotic arm for community outreach events
- Incorporated PID control of joint position and wrote inverse kinematics algorithms for easier manipulation

Lighted Turn Signal Glove Project, UW MadMakers

- Developed a wearable device to help with visibility and communication when bicycling at night
- Implemented simple gesture recognition using an IMU sensor and ESP32 microcontroller
- Designed and assembled a custom PCB to hold LEDs, battery charging, ESP32, IMU, and UART/SPI connections

Autonomous Trolley Project, Intro to Mechanical Engineering

- Collaborated with 2 classmates on software, electronics, and mechanical components to create an obstacle-detecting trolley using an Arduino
- Employed innovative design and fabrication to place in the top quartile for all grading criteria
- Reduced data noise and improved reliability by testing electronics and software, then researching solutions

OTHER EXPERIENCE

Freight/Receiving Associate, The Home Depot, July - August 2022

- Worked with a team to efficiently unload, sort, and shelf incoming goods in proximity to heavy machinery
- Provided customer service by helping guests locate and choose items in the hardware, electrical, and tools sections

SKILLS

Software:	Solidworks, Onshape, EES, Autodesk Inventor, ROS, KiCad, EasyEDA, Docker
Programming Languages:	Python, Java, C++, R, Matlab
Tools:	Shop Machines, 3D Printing, Hand Tools, Soldering, Oscilloscope, Welding
Design:	Mechanical Design, Microcontroller Integration, Electrical Schematics, PCB Design
Foreign Languages:	Mandarin Chinese

ACTIVITIES

Wisconsin Robotics (Outreach/Minibots Subteam Lead), UW-Madison, Fall 2021-Present

UW MadMakers, UW-Madison, Fall 2021-Spring 2022

FTC Robotics, Team 14078, Spring 2018-Spring 2021

Scouts BSA, Troop 14, Fall 2014-Fall 2020

- Earned Eagle Scout Rank, September 2020