Richard A. Ray

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EDUCATION

Louisiana State University (LSU) — Baton Rouge, LA
Bachelor of Science in Mechanical Engineering, Robotics Minor *Expected May 2026*
Relevant Coursework: Thermodynamics, Statics, Dynamics, Fluid Mechanics, System Dynamics, Heat Transfer, Instrumentation, Manufacturing Processes, Material Selection, Simulation Methods

EXPERIENCE

Undergraduate Researcher — LSU iCore Robotics Laboratory

Baton Rouge, LA | 2024 – Present

- Designed, built, and tested robotic subsystems, including sensors, actuators, and control circuits.
- Developed and implemented software for autonomous navigation, perception, or manipulation.
- Collaborated with a team to integrate hardware and software into functional prototypes.
- Assisted in maintaining lab equipment and troubleshooting hardware/software issues.
- **Hawaii Coral Reef Field Study — ROV & AUV Deployment**
    - Collaborated in a four-student team on underwater robotics research off O‘ahu.
    - Built and integrated key subsystems of a deep-sea autonomous underwater vehicle.
    - Piloted and maintained both ROVs and AUVs during field deployments.
    - Performed on-site troubleshooting, repairs, and system checks to ensure mission success.
    - Collected image data for coral reef analysis in support of environmental research.

Student Worker — LSU Student Union, Event Management

Baton Rouge, LA | 2023 – Present

- Assisted in planning, coordinating, and executing campus events and activities.
- Maintained accurate records of event schedules, attendance, and resources.

PROJECTS

Underwater Thruster Test Stand *(iCore Lab, 2025)*

- Designed and built a test apparatus to measure thrust output of underwater motors.
- Implemented force sensors and a data acquisition system to generate thrust–throttle curves.
- Evaluated thrusters under varying environmental conditions to inform future ROV/AUV designs.

Robotics Coursework Projects *(LSU, 2023–2025)*

- Programmed and tested robotic arm motion using MATLAB and Simulink.
- Developed a cane for the visually impaired using LiDAR, machine vision, and neural networks.

SKILLS

- **Software:** SolidWorks, Fusion 360, Slicing Software, MATLAB, Simulink, Microsoft Office
- **Programming:** Python, Arduino, Linux, ROS, C++
- **Technical:** System Dynamics, Prototyping, 3D Printing, Instrumentation, Heat Transfer Analysis