JOHN LYLE

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EDUCATION

The University of Texas at Austin Bachelor of Science, Mechanical Engineering May 2025
Concentration: Robotics and Mechatronics
Overall GPA: 3.77

EXPERIENCE

Nuclear Robotics Group, The University of Texas at Austin – *Undergraduate Research Assistant* January 2024 - Present
- Designed and manufactured aluminum adapter plate using a CNC for increased max load on end effector of a robot arm
- Used MoveIt Pro software to create decision trees for motion planning simulation using a robot arm

Contoro Robotics – *Robotics Engineering Co-Op* May 2023 – December 2023
- Programmed a ROS2 Node in C++ to interface with a haptic feedback teleoperation robot using impedance control
- Created a test fixture to evaluate torque bandwidth and positional hysteresis of a Bowden cable actuator
- Prototyped a custom handheld controller with one analog and three digital inputs using analog to digital signal processing
- Fabricated a safety control box and light curtain system to maintain a safe operation region surrounding an industrial robot
- Redesigned control box and robot stand to reduce footprint and cable clutter using sheet metal design in SOLIDWORKS

Texas Inventionworks, The University of Texas at Austin – *Student Associate* January 2023 - Present
- Assisted and advised students on designing and manufacturing projects such as concrete bowling balls, drones, and RC cars
- Developed a new training for manufacturing a ring on the lathe to increase student confidence and usage of machines
- Trained students on safe and efficient use of maker space machines including 3D printers, manual mills, and lathes

RadLab, The University of Texas at Austin – *Undergraduate Research Assistant* June 2022 - April 2023
- Updated and revamped C++ code for an Arduino system to meet new design requirements and safe operation standards
- Worked with a team to design and produce a fleet of wireless gas samplers to track emissions from nuclear weapons testing
- Prototyped a 3D printed alternative to a locking mechanism lowering costs of that part by 90%
- Identified and remedied design flaws resulting in four times higher pressure ratings and savings of $500 per sampler

ACADEMIC PRESENTATIONS AND PERSONAL PROJECTS

Wireless Independent Noble Gas Sampler: Software Overview – *American Nuclear Society Student Conference* April 2023
- Presented a poster on the WINGS project and its impact on non-proliferation efforts and future project goals

Optimal Schedule Creation Program
- Developed to create the most optimal schedule for a student organization snack shop based on officer availability
- Implemented object-oriented programming and custom classes to create a tree-based data structure for creating schedules

LEADERSHIP EXPERIENCE AND ACTIVITIES

American Society of Mechanical Engineer – *Vice President, External Affairs Officer* Fall 2021 - Present
- Direct a team of 15 officers to host academic, community service, professional, and social events for 900+ student members

AWARDS

- University Honors (4 semesters)
- Outstanding Student Organization Award (ASME) - *The University of Texas at Austin, Tower Awards*
- Best Service Organization (ASME) – *The University of Texas at Austin, Swing Out Awards*
- BASF Academic Excellence Scholarship

SKILLS

Manufacturing Methods: CNC Mill, Manual Mill, Lathe, Laser Cutter, Sheet Metal DFM, Injection Molding, FDM & SLA 3D Printing
Programming Languages: Python, Matlab, C++, ROS2
CAD and CAM: Solidworks, Fusion 360, Onshape
Electronics: Soldering, SMD Rework, Circuit Design, Circuit Analysis
Operating Systems and Development Platforms: Linux, Windows, Arduino, Raspberry Pi