

Rex Worley

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EDUCATION

Texas A&M University

Master of Science, Engineering Technology

GPA: 3.57

Aug 2026 - May 2027

College Station, Texas

Texas A&M University

Bachelor of Science, Mechatronics Engineering

• GPA: 3.35

Aug 2022 - May 2026

College Station, Texas

SKILLS

- **Programming Languages:** Python 3, MATLAB, C/C++
- **CAD & Mechanical Design:** SolidWorks, Fusion 360
- **Electronics & Simulation:** Multisim, PCB Design, Basic Electronics Skills, Circuit Design, Analog and Digital Circuits, Electronic Circuits
- **Embedded & Control Systems:** ARM Cortex-M (32-bit), Microcontrollers, PLC Programming, Linux Environment
- **Robotics & Automation:** ROS2, OpenCV, Robotics, Servos, PID
- **Prototyping & Fabrication:** Hands-on Prototyping, Electromechanical Integration, Hardware Integration
- **Software & Tools:** Git, Web Dashboard Development, Edge Computing, IoT Systems, FastAPI

WORK EXPERIENCE

PG GOLF LLC

W&R Operations Intern

May 2025 - Aug 2025

Sugar Land, Texas

- Established and calibrated an autonomous pneumatic-electrical robotic arm with integrated electromechanical systems, enhancing automation and industrial robotics expertise.
- Rapidly prototyped and tested gripping and movement subsystems using microcontrollers on a Linux environment, applying basic electronics skills and hands-on prototyping methodologies.
- Developed and programmed PLC and HMI systems to streamline process control and real-time monitoring on a Raspberry Pi dashboard, including selection of motors, gearboxes, bearings, springs, and custom PCB hardware.

PROJECTS & COURSEWORK

Advanced Control Systems

Aug 2025 - Dec 2025

- Modeled and analyzed dynamic systems using transfer functions and state-space representations; evaluated stability, transient response, and steady-state error.
- Designed and tuned feedback controllers (PID, lead/lag) using MATLAB and Simulink to meet performance and stability requirements.
- Developed a servo-actuated ball-balancing platform using closed-loop PID control, integrating real-time feedback for dynamic stabilization and precision motion control.

Mechatronics II

Aug 2025 - Dec 2025

- Configured and programmed a UR3e robotic manipulator for autonomous object transport, enabling task execution based on external system variables.
- Developed and deployed robotic control workflows using ROS 2, gaining hands-on experience with robot communication, motion control, and system integration.
- Applied mechatronic system principles including actuation, sensing, and real-time control in a robotic manipulation environment.

Closed-Loop Robotic Systems Design

Jan 2024 - May 2024

- Analyzed experimental data from trials and devised potential solutions to implement.
- Constructed robotic systems to autonomously complete objectives while using dynamic parameters.
- Integrated various components including a Raspberry Pi, electric motors, and TOF and RGB sensors for autonomous navigation and object identification.

AWARDS

- **Eagle Scout (BSA):**

May 2021