

Willem Bannick

willem.bannick@gmail.com ♦ (940) 600-2140 ♦ www.linkedin.com/in/willem-bannick-82127321b

OBJECTIVE

Dedicated Texas A&M Mechanical Engineering student eager to contribute my firsthand technical skills and robotics enthusiasm to a full-time engineering or research position. Currently aiming to further develop my knowledge in robotics and participate in innovative projects that challenge me.

EDUCATION

Texas A&M University

Bachelor of Science in Mechanical Engineering – 3.43

College Station, TX

Graduation: May 2025 (Expected)

- *Minor in Electrical Engineering, Undergraduate Research Scholar.*
- *Distinguished Student: Spring 2022, Summer 2023, Fall 2024.*
- **Relevant Coursework:** Mechanics of Robotic Manipulators, Machine Learning, Numerical Methods and Optimization, Geometric Modeling, Mechanical Engineering Design, Analog Circuit Design, Digital Circuit Design, Power Electronics

RESEARCH & PUBLICATIONS

Texas A&M Human-Empowered Robotics and Controls Laboratory

Undergraduate Research Assistant – Advisor: Dr. Gray Thomas

College Station, TX

August 2024 – Present

- Conduct research on advanced controls theory by implementing direct-user operation of wearable robotics platforms
- Design, fabricate, and test efficacy of custom Human Input Devices (HID) for application in direct-user controls studies
- Develop and manufacture alignment device to improve sensor readings and comfort of wearable robotics platforms

Paper: *Z. Bucknor-Smartt, J. Mustafa, W. Bannick, L. Graves, M. Korwani, G. C. Thomas, “Direct User Control of Lower Limb Assistive Exoskeletons”, IEEE Robotics and Automation Letters, June 2025 (In Progress) [Journal paper + Undergraduate Thesis]*

Texas A&M Robotics and Automation Design Laboratory

Robotics Research Engineering Intern – Advisor: Dr. Robert Ambrose

Bryan, TX

May 2024 – August 2024

- Interfaced daily with graduate students, professors, and research engineers to successfully accomplish daily design challenges on an autonomous vehicle recovery system.
- Developed and iterated over 140 CAD models of machine parts and assemblies to optimize module design for additive manufacturing methods.
- Designed and utilized mounting platform to improve accessibility to recovery module for easier modification of system.
- Planned and manufactured interior wiring for recovery module for ease of access to vital electronic elements.
- Coordinated design plan to effectively complete first iteration of recovery module within 3-month timeline.

EXPERIENCE

Texas A&M University Robotics and Leadership Experience

Vice President

College Station, TX

April 2024 – Present

- Orchestrated the successful execution of 13 advanced project teams, adhering to semesterly deadlines and team budgets.
- Spearheaded the organization and coordination of end-of-semester team project showcases, resulting in greater engagement and notoriety of the organization.
- Implemented efficient systems for organization-wide team resource allocation, ensuring optimal utilization of resources for meetings, project goals, and conflict resolution initiatives.

Lab Quality Committee Officer

July 2023 – Present

- Coordinated a comprehensive lab space cleanup and reorganization initiative, resulting in improved lab usage efficiency and enhanced sub-team productivity during meetings and build sessions.
- Collaborated with senior leadership to create an inventory system of club equipment and materials for use by all club sub-teams.

Texas A&M University Robomaster Robotics

Drivetrain Hardware Design Engineer – “Engineer” Bot

College Station, TX

August 2023 – May 2024

- Communicate weekly with cross-functional teams to assure compatibility among robot chassis, wheel, and grabbing mechanisms.
- Conduct in-depth research to explore and refine potential designs for a compact suspension system for a 50-pound robot.

- Utilize CAD software to design complex mechanical components for rapid prototyping and iterative design.
- Regularly present preliminary and ongoing design decisions and manufacturing process rationale to an engineering board.

Texas A&M University – Dept. of Mechanical Engineering

Facilities Student Worker

College Station, TX

August 2022 – May 2024

- Interface daily with graduate students and professors, facilitating unhindered installation and removal of laboratory and office equipment in over five buildings and over 40 labs.
- Process large volume of packages for careful storage and redistribution to professors and graduate students.
- Catalog and maintain extensive library of over 500 instruments and tools for department student use.
- Operate hand and power tools to repair, mount, and assemble furniture, lab equipment, and signage.

PROJECTS

Myoelectric Prosthetic

Hardware Design Lead

College Station, TX

August 2023 – Present

- Undergraduate robotics project with a mission to enhance the quality of life for a young boy in Bryan, TX, by designing and developing a myoelectric prosthetic hand.
- Leveraging a multidisciplinary approach, our project encompassed mechanical engineering, electronics, controls, and machine learning, with the goal of creating a prosthetic hand that not only mimicked natural hand movements but also responded intuitively to the user's gestures.
- Integration of myoelectric sensor technology enabled the prosthetic hand to detect and interpret electrical signals generated by muscle contractions in the user's residual limb, allowing for rapid interaction between the user and the prosthetic hand.
- Application of collective expertise in mechanical design allowed for the development of a lightweight and ergonomic prosthetic hand that could mimic the natural range of motion of a human hand without being cumbersome to wear.
- Employment of machine learning algorithms to analyze and interpret the gestures made by the user allowed for better redundancy of the sensing process and adaptability to changes in position or orientation of the prosthetic.

TURTLE Hatchling Competition

Project Lead

College Station, TX

January 2023 – May 2023

- Student robotics team tasked with designing and testing a competitive RC car chassis for an organization-wide RC soccer competition. Implemented effective teamwork and problem-solving strategies to refine the car's handling and performance.
- Utilized CAD software expertise to engineer an aerodynamic chassis and precision suspension system while integrating provided electronic components.
- Secured the championship title, showcasing our collaboration, innovation, and determination in robotics and engineering challenges.

Eagle Scout Project

Project Lead

Denton, TX

October 2020 – November 2020

- Community outreach project performed as a major requirement to reach the Eagle Rank in scouting.
- Modified an existing water dispensing system and installed another identical one on the grounds of a local nature preserve to assist the local wildlife and bee population in finding fresh water during the dry months in the summer.
- Led members of my troop to help source materials and manufacture and assemble dispensers before installing them on-site.
- Fundraised for all costs associated with the project and finished under-budget and ahead of schedule.

HONORS & CERTIFICATIONS

- **Honors:** NESA Member; Dean's Distinguished Student Award; Mollie and Jim Schulze '50 Scholarship Recipient; TMPA Scholarship Recipient.
- **Certifications:** OSHA 30-hour Outreach General Industry Training; CITI Program GCP for Clinical Investigations of Devices; CITI Program Biomedical Research Investigators and Key Personnel.

SKILLS & INTERESTS

- **Skills:** Leadership; Communication; Time management; Microsoft Office Suite; Technical writing; Academic writing; SolidWorks; Autodesk Inventor; Autodesk Fusion; Multisim; Python; C++; MATLAB; TensorFlow; Git.
- **Interests:** Electromechanics; Actuator Design; Robotics Design and Drafting; Design Optimization.