Mark Menezes

512-920-7446 | mark_menezes@tamu.edu | linkedin.com/in/menezes-mark | College Station, TX

Motivated student seeking a mechanical engineering internship. Possesses strong hands-on design experience, space systems research, and CAD proficiency with a focus on structural and mechanical components for aerospace applications.

Education

Texas A&M University — College Station, TX
BS, Mechanical Engineering; Minor - Materials Science & Math, 3.50 GPA — *Aug. 2023 – May 2027*

Experience

Robotics Intern
Texas A&M University Robotics Automation and Design (RAD) Lab — College Station, TX

Manipulator Group — *May 2025 – Aug. 2025*
- Designed, manufactured, and tested a modular parasitic torque testbed to measure resistance created by external cable harnesses on a robotic arm for Low-Earth-Orbit
- Designed and manufactured 3D printing compatible components to make them DFM/DFA friendly
- Modeled and manufactured an enclosure to test custom motor controllers with an absolute rotary encoder, achieving perfect concentricity and z-height

Space Modular Manipulator Group — *May 2024 – Aug. 2024*
- Co-designed robotic actuators for a 7-DOF robotic arm, reducing mass and improving harmonic drive efficiency in collaboration with NASA engineers
- Developed a wire harness fatigue testbed, simulating a space environment, simulating a vacuum and heating/cooling, for life-cycle validation over 1 million cycles
- Created engineering calculators in Visual Basic to determine minimum bolt sizes for dynamic fixtures, enhancing safety and precision in structural design
- Supported full design life cycle: concept, sizing, CAD modeling, prototyping, and validation

Beekeeper — Austin, TX
Great Hills Honey Company — *March 2018 – Aug. 2023*
- Used integrated pest management techniques to control Varroa Mite infestations in hives
- Implemented weight and temperature sensors to monitor hive health remotely, preventing colony collapse
- Engineered solutions to increase honey extracting efficiency with applied heaters to reduce honey viscosity, two stage filtering to reduce clogging, mounts to reduce extractor vibrations

Projects

Engineer, Formula SAE Electric | *Solidworks, Optimum Kinematics* — *Sept. 2023 – Present*
- 2+ years of progressively challenging experiences on multiple subteams (Chassis, Suspension, Aerodynamics)
- Designed, manufactured, assembled, and raced an electric formula-style vehicle within a one year cycle
- Led end-to-end design and fabrication of a custom Pro-Ackermann steering system, optimizing lateral force and handling characteristics while minimizing tire scrub
- Developed a algorithm to convert designs from the simulation software (Optimum Kinematics) to the modeling software (Solidworks), removing human error and saving significant time
- Created a full-size and functional driver model optimizing ergonomics/aerodynamics, ensuring rules compliance
- Mapped the vehicle rollover envelope to enable the first fully rules compliant vehicle in the history of the program and maximize safety

Special Events Committee, Student Engineers Council | *Organization, Leadership* — *Feb. 2024 – Present*
- Organized and planned events for College Engineering students, such as Department Information day
- Hosted multiple company speaker series for more than 500 students

Technical Skills

Software: Solidworks, Optimum Kinematics, Multisim, Prusa Slicer, Onshape, Autodesk Inventor, Python
Coursework: Calculus I, II, III; Differential Equations; Statics; Thermodynamics; Fluid Mechanics, Circuits
Manufacturing: 3D Printing, Mill, Lathe, CNC
Languages: English (fluent), Spanish (conversational), Portuguese (conversational)
Security: US Citizen, Controlled Unclassified Information (CUI)