Marcus Rodriguez

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EDUCATION

University of Texas at Austin — Austin, TX
Bachelor of Science in Mechanical Engineering — Aug 2024 – May 2028
Relevant Coursework: Advanced Robotics, Computational Design, Fluid Dynamics, Materials Science, Control Systems, Mechatronics
GPA: 3.78/4.0

TECHNICAL SKILLS

Languages and Tools: MATLAB, Python, SolidWorks, ANSYS, AutoCAD, ROS **Frameworks and Platforms:** Arduino, Raspberry Pi, 3D Printing, OpenCV, TensorFlow

PROJECTS

Autonomous Drone Navigation System | *Python, ROS, OpenCV*
- Designed an autonomous drone with advanced obstacle avoidance capabilities
- Implemented computer vision algorithms for real-time path planning
- Achieved 95% navigation accuracy in complex environments

Renewable Energy Optimization | *MATLAB, ANSYS*
- Developed computational models for solar panel efficiency improvement
- Conducted thermal and stress analysis of renewable energy systems
- Proposed design modifications reducing energy loss by 15%

Biomimetic Prosthetic Design | *SolidWorks, 3D Printing*
- Created advanced prosthetic limb with improved range of motion
- Utilized biomimetic principles in mechanical joint design
- Collaborated with biomedical engineering team for prototype development

RESEARCH EXPERIENCE

Robotics Research Assistant — Jan 2022 – May 2023
University of Texas at Austin — *Austin, TX*
- Researched adaptive robotic systems for complex environments
- Developed machine learning algorithms for robotic learning
- Presented findings at International Robotics Conference

WORK EXPERIENCE

Mechanical Engineering Intern — Jun 2023 – Aug 2023
Dell Technologies — *Round Rock, TX*
- Supported product design and thermal management solutions
- Conducted computational fluid dynamics (CFD) simulations
- Optimized cooling system design for computer hardware

Robotics Intern — May 2022 – Aug 2022
NASA Johnson Space Center — *Houston, TX*
- Assisted in development of robotic systems for space exploration
- Performed stress testing and performance analysis of robotic components
- Contributed to design improvements for next-generation space robotics