

Andres Barrios

abarrios10@utexas.edu | (832) 621-6902 | [LinkedIn](#) | [Portfolio](#)

EDUCATION

The University of Texas at Austin <i>Bachelor of Science, Mechanical Engineering Honors</i> <i>Certificate: Programming and Computation</i>	May 2027 GPA: 4.0
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TECHNICAL SKILLS

CAD/Analysis: SolidWorks, Autodesk Inventor, Inventor Simulation, DFMA, Tolerance Stack-Up Analysis

Manufacturing: 3D Printing, CNC Machining, Injection-Molding, GD&T

Programming: Python, MATLAB

PROFESSIONAL EXPERIENCE

Apple – Incoming Product Design Engineer Intern Cupertino, CA	January 2026
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- Internship in the Accessories Product Design Engineering group

Samsung – Mechanical Design Engineer Intern Austin, TX	May 2025 - August 2025
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- Designed mechanical assembly in Autodesk Inventor implementing electric actuators and custom-built pipe collar to safely lift 200 lb piping within pump input subsystem, eliminating operator handling risks
- Created detailed GD&T drawings for machined pipe collar and adjustable claw clamps, using manufacturer DFM feedback to optimize parts for machining while upholding existing design constraints
- Analyzed potential failure modes of lifting system, confirming via hand calculations that clamping-induced hoop stress remained below pipe yield strength and frictional torque was sufficient to resist actuator-induced rotation
- Evaluated stress under applied torque on steel collar internal corners using Inventor Simulation to prevent lifting failure

Amazon Robotics – Hardware Development Engineer Intern North Reading, MA	January 2025 - May 2025
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- Operated within team of mechanical engineers in design development cycle of new fully autonomous drive unit robot releasing in over 1000 distribution centers, including prototyping and validation of hardware components
- Designed bolted wheel hub and taper-lock attachment in SolidWorks for drive unit robot, aimed to facilitate wheel removal from locomotors and to reduce downtime during component testing and inspection by over 50%
- Optimized wheel system assembly by performing tolerance stack-up analyses and updating GD&T drawings for both machined parts, eliminating worst-case interference between critical wheel and locomotor surfaces
- Prototyped six modular ‘skeleton’ drive units, enabling in-facility testing of locomotors and sensor field-of-vision mapping

BP – Mechanical Reliability Engineer Intern Whiting, IN	May 2024 - August 2024
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- Developed injection quill design to minimize fluid impingement at pipe tee junction, analyzing flow conditions to optimize material selection and evaluate vibration effects on quill stability in piping system
- Coordinated delivery of proper design requirements of injection quill, per ASME B31.3 standards, with third-party vendor
- Designed new drainpipe for condensate removal, improving steam heat transfer efficiency to piping systems by creating new drainage line with ASME-compliant sloping to prevent condensate accumulation in critical fluid lines

PROJECTS

RC Car <i>SolidWorks, Prototyping</i>	September 2025 - Present
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- Design RC racecar in SolidWorks with team of five students and oversee prototype fabrication, material selection, and assembly within \$100 budget for competitive performance against 20+ teams
- Model steering geometry using Newton’s laws and Ackerman steering, enabling accurate prediction and tuning of the turning radius and stability during dynamic testing of the RC car

Fidget Spinner Manufacturing <i>SolidWorks, FEA, Prototyping</i>	August 2023 - December 2023
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- Developed three fidget spinner models in SolidWorks, with various prototypes manufactured using different machine-shop tools, including a 3D printer, CNC laser cutter, and injection-molding machine
- Analyzed high-stress regions on model with SolidWorks Simulation to help optimize design for stability and durability

LEADERSHIP AND PROFESSIONAL DEVELOPMENT

Management Leadership for Tomorrow (MLT) – <i>Career Preparation Fellow</i>	January 2025 - Present
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- Accepted into selective 18-month professional development program for high-achieving talent
- Complete business case studies and assignments to grow leadership and technical skills relevant to technology sector
- Attend conferences hosted by industry leaders such as Apple, Google, and LinkedIn