

Thomas Gonzalez

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EDUCATION

Johns Hopkins University
BS Mechanical Engineering
GPA: 3.64/4.0

Baltimore, MD
Expected May 2027

TECHNICAL SKILLS

- **CAD Tools:** SolidWorks (200+ hours), Autodesk Fusion 360, Creo
- **Programming & Software:** MATLAB (200+ hours), Java (100+ hours), Python (50+ hours), C++ (50+ hours), Ansys, LabVIEW, Microsoft Visual Studio
- **Prototyping & Fabrication:** GD&T, Soldering, Milling & Lathe Operation, 3D Printing
- **Language Skills:** English (fluent), Spanish (fluent), German (fluent)

INTERNSHIP EXPERIENCE

ENGINEERING INTERN

The Maryland Zoo in Baltimore

Baltimore, MD
April 2025 - Present

- Enhanced animal well-being through animal enrichment devices, integrating Arduino microcontrollers with sound, motion detection, and RF communication modules.
- Developed a C++ user interface to streamline usability for zookeepers and simplify system control.
- Achieved 95% reading detection accuracy through testing and validation of sensors, including LiDAR, PIR, and Doppler.
- Established partnerships with leading Zoos nationwide, resulting in active plans to implement enrichment devices across 5+ states.

RESEARCH INTERN

AMIRo Lab - Laboratory for Computational Sensing and Robotics (LCSR)

Baltimore, MD
March 2025 - Present

- Developed tracking and calibration methods for biopsy needles used in autonomous prostate cancer surgeries.
- Reduced processing time for real-time modeling by 30% with Python-based needle deflection algorithms.
- Designed and built a calibration rig with MATLAB-based code to validate predictive models.

LEADERSHIP EXPERIENCE

MECHANICAL SUBTEAM LEAD

Hopkinauts Mars Rover Team

Baltimore, MD
January 2024 - Present

- Led a team of 20+ students in designing and building the frame, robotic arm, and science box for the University Rover Challenge (URC).
- Designed a 6-DOF robotic arm and conducted FEA in Ansys to optimize a custom cycloidal gearbox and end-effector for strength and precision.
- Achieved 80% life detection accuracy with custom soil delivery mechanism, chemical analyses, and spectrometer.
- Raised \$25k through sponsorships and donations, presented project work at JHU Design Day 2025 and JHU Physics Day 2025.

RECRUITMENT CHAIR

Society of Hispanic Professional Engineers

Baltimore, MD
February 2024 - Present

- Created the Familia Mentorship system, pairing incoming students with upperclassmen.
- Maintained community through cultural events, potlucks, and mixers.
- Helped grow chapter membership by over 50% by forming connections and promoting SHPE resources at events, in classes, and at fairs.