Matthew Fernandez

mfernandez64@gatech.edu | linkedin.com/in/fernandez-matt | https://mattfernandez.me

EDUCATION

Georgia Institute of Technology – Atlanta (GA) *August 2021 – December 2025*
Bachelor of Science in Mechanical Engineering; Robotics Minor GPA: 4.00/4.00

RESEARCH

Complex Rheology and Biomechanics Lab | Georgia Tech (US) *August 2023 – Present*

- Leading the design and testing of an amphibious undulatory limbless robot investigating the role of mechanical intelligence in underwater obstacle navigation **(patent submitted)**

Soft Robotics Lab | ETH Zurich (Switzerland) *May 2025 – Present*

- Leading the development of an autonomous untethered fish platform for marine surveillance, exploring novel actuation techniques and hydrodynamic optimization for fluent locomotion

Fabrication Integrated Design Lab | MIT (US) *June 2024 – December 2024*

- Designed and tested a monopropellant driven oscillatory robot for untethered energy efficient locomotion using hydrogen peroxide decomposition.

Presentations and Publications

- 4x Peer-reviewed publications (ICRA 2025, Robosoft 2025, ICRA 2024)
- 6x Conference abstracts (APS 2025, SICB 2025, APS 2024)
- 7x Research presentations (ICRA 2025, APS 2025, SICB 2025, MIT MSRP 2024, ICRA 2024)

PROFESSIONAL & PROJECT EXPERIENCE

NASA Jet Propulsion Laboratory | *Robotic Manipulation Intern* *January 2023 – August 2023*

- Developed architecture and prototypes of an ultra-lightweight manipulation system on the Sample Recovery Helicopter (SRH) as part of the Mars Sample Return (MSR) mission
- Conceptualized and prototyped more than 8 unique end-effectors for mission concept proposals and testing

Procter & Gamble | *Manufacturing Process Engineering Intern* *May 2022 – August 2022*

- Used SOLIDWORKS to design, optimize, and manufacture universal grippers enabling transport vehicles to grip multiple bottle sizes eliminating line stoppage and resulting in over $100,000 in annual savings

URC Mars Rover Team (Georgia Tech) | *Mechanical Lead* *September 2021 – July 2024*

- Led 25 engineers in the design and manufacture of a semi-autonomous rover for complex missions in simulated Martian terrain to compete in the University Rover Challenge
- Utilized SOLIDWORKS for the development of full carbon fiber-based rocker-bogie drive train and chassis, high-precision arm, manipulator, and scientific sampling device

Antarctic Marine Vehicle (Georgia Tech) | *Mechanical Lead* *August 2022 – December 2022*

- Co-led the designing, prototyping, and manufacture of the next iteration Autonomous Underwater Vehicle (AUV) for observation of polar-cap degradation at the Antarctic grounding line

AWARDS

- **ThinkSwiss Scholar:** 1 of 25 students selected internationally as a student researcher at a Swiss Institute
- **Astronaut Scholar** (ASF): 1 of 71 students nationwide for a merit-based research scholarship
- **Godbold Scholar** (Georgia Tech – Merit): 1 of 8 students in the Southeast selected for a full scholarship
- **Provost Scholar** (Georgia Tech – Merit): Top 1% of students selected for a waived tuition cost

SKILLS

Technical Software | SOLIDWORKS, Siemens NX, Autodesk Inventor, Topological Opt., Fusion 360

Hardware Experience | FDM/SLA 3D-Printing, Waterjet, Laser-cutter, Soldering, Arduino, Raspberry Pi

Programming | MATLAB, Python, C++, ROS, Arduino, RSLogix