# Helena Teixeira-Dasilva

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## Education

**University of Southern California** Aug 2024 - May 2026
Masters of Science in Aerospace and Mechanical Engineering - AI and Machine Learning
***Involvement:*** *GEM Fellowship, Varsity Cross Country and Track, LA Public Schools Tutor*
***Courses:*** *Robotic Dynamics and Control, Mathematical Methods in Deep Learning, Computer Control of Mechanical Systems, Linear Controls II, Robotic Autonomy in Extreme Environments*

**Washington University in St. Louis** Aug 2020 - May 2024
Bachelor of Science in Mechanical Engineering, Second Major Computer Science
***Honors:*** *Engineering Dean's List (All Semesters); Academic All-American (FL2022, SP2023); President's Council Scholar-Athlete Team Selection*
***Involvement:*** *Varsity Cross Country and Track, BearCubs club - running coach for children with autism, Heat Transfer TA*

## Experience

**Lawrence Livermore National Laboratory** Livermore, CA
*Autonomous Systems Engineering Intern* *June 2024 - Aug 2024; May 2025 - present*
- Designed and flight-tested UAV autonomy including precision landing, vision-based collision avoidance, and real-time UAV-boundary intersection prediction using Python, MAVLink, and ArduPilot.
- Integrated visual SLAM, trajectory planning, and offboard control into a unified autonomous flight stack.
- Built a tele-operated UGV system with Arduino-based dual-motor control; delivered a functional test-bench prototype in 2 weeks.
- Selected as a top 10 finalist in a lab-wide research symposium among all engineering interns.

**Robot Locomotion And Navigation Dynamics Laboratory** Los Angeles, CA
*Robotics Engineer* *Aug 2024 - present*
- Developed a ZMP-based quadruped crawling gait for locomotion while estimating ground stiffness.
- Built a human–robot teaming web platform integrating researcher input with Monte Carlo Tree Search for autonomous path planning and field data collection.

**WingXpand™** St. Louis, MO
*Robotics Software Engineer Intern (Part-Time)* *Sept 2023 - Dec 2023*
- Led simulation efforts and contributed to object detection and hardware testing for an early-stage UAV start-up.

**MIT Lincoln Laboratory** Lexington, MA
*Safe Autonomy Research Intern - Integrated Missile Defense Technology* *May 2023 - Aug 2023*
- Led full-cycle development of an autonomous UAV landing system using PX4 firmware; achieved successful hardware validation within 6 weeks.
- Developed object-oriented software in Python for simple 3D and software-in-the-loop simulations.
- Co-led a team project pitching a UUV efficiency-enhancing payload to lab leadership.

**Enterprise Holdings Inc.** St. Louis, MO
*Software Engineering Intern* *May 2022 - Aug 2022*
- Developed full-stack features for vehicle management applications using Java, JavaScript, HTML/CSS, and SQL.
- Designed RESTful APIs and optimized Oracle database workflows.

## Skills Summary

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|---|---|
| **Languages** | Python, C/C++, Java, MATLAB, SQL, JavaScript, HTML/CSS |
| **Robotics & Tools** | ROS, ROS2, ArduPilot, PX4, Gazebo, Simulink, OpenCV, MAVLink, Arduino |
| **Dev & Platforms** | GIT, Jira, Confluence, SolidWorks, Linux, Windows, LaTeX |
| **Soft Skills** | Leadership, Communication, Problem Solving, Time Management |

*References available upon request.*