JUAN SALAZAR

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Education

Massachusetts Institute of Technology (MIT), Cambridge, MA
M. Eng in Electrical Engineering and Computer Science | GPA: 4.4 *May 2022*
B.S. in Aerospace Eng. (Conc. in Autonomous Systems) & Electrical Eng. | GPA: 4.4 *June 2020*
Embedded Systems · Autonomy and Decision Making · Space Systems Engineering

Research & Work Experience

Novium, Houston, TX *August 2024 - Present*
Embedded Software Engineer

- Develop safety-critical embedded software (C++) for real-time control of in-space berthing mechanisms using NASA standards for software requirements, safety, and assurance
- Develop and test pick-and-place capability for 6-DOF robotic arm ROS2 MoveIt path planning tools in simulation and on real hardware
- Developed software for customer demonstrations of robot arm joint mobility and end-effector trajectory following

ARES Corporation (NASA Johnson Space Center), Houston, TX *January 2023 - July 2024*
Systems Engineer/ISS Robotics Analyst

- Design ISS robotic arm trajectories to assess kinematic feasibility of upcoming operations
- Present results at engineering review boards and ISS program management boards
- Develop Python/C++ tools that automate and extend robotic analysis software functionality with a minimum 50% reduction of time spent on analysis and documentation

Distributed Robotics Laboratory (CSAIL), Cambridge, MA *July 2018 - May 2022*
Undergraduate/Graduate Research Assistant

- Developed, built and tested autonomous soft robotic fish fleet that led to publication
- Contributed to underwater visual servoing algorithm and state machine using OpenCV/ROS
- Contributed to algorithms for design/control optimization of underwater vehicles in Python/C++ that led to publications at top-tier conferences (ICRA, IROS)

Leadership

NASA BIG Idea Challenge (Extreme Terrain Mobility) *November 2021 - June 2022*
Software & Autonomy Lead

- Led a team of 5 to develop ROS simulation to support design trade studies for finalist lunar robot in NASA extreme terrain mobility challenge
- Formulated software architecture and walking capability system requirements

Publications

Juan Salazar, Levi Cai, Braden Cook, Daniela Rus. “Multi-Robot Visual Control of Autonomous Soft Robotic Fish.” Published, IEEE OES AUV Symposium, 2022.

Skills & Awards

Software: Python, C++, Git, Gazebo, ROS/ROS2, MoveIt, Linux, MATLAB
Hardware: Raspberry Pi, Microcontrollers, Circuits & Electronics, 3D Printers
Languages: French (fluent), Spanish (fluent)