Jose Jaime

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Seattle, WA

EDUCATION

University of Washington Seattle, WA
Master of Science in Electrical Engineering (Robotics and Controls), GPA: 4.0 *Expected Fall 2025*
Relevant Coursework: Control Systems, Linear Systems Theory, Models of Robotic Manipulation, Linear Multivariable Control, Estimation and System Identification

University of Washington Seattle, WA
Bachelor of Science in Electrical Engineering (Embedded Systems), GPA: 3.53 *Graduated Summer 2020*
Relevant Coursework: Embedded Systems Capstone

TECHNICAL SKILLS

Languages: Python (NumPy, SciPy, Pandas, CVXPY, JAX), C++, C, Bash
Robotics: ROS 2 (Humble), MoveIt2, Pinocchio, Behavior Trees, MuJoCo, TF2
Software & Tools: Git, GitHub, Docker, CMake, Linux, SSH
Hardware & Embedded: Microcontrollers (STM32, Arduino), Raspberry Pi 5, Debugging Tools (GDB)

RESEARCH EXPERIENCE

Graduate Research Assistant Sep 2024 – Present
University of Washington, Personal Robotics Lab (Advisor: Prof. Siddhartha Srinivasa) *Seattle, WA*

- **Articutool: A Decoupled, Untethered Wrist for Assistive Feeding**
  * Engineered a novel 2-DOF robotic wrist with onboard computation (RPi5) and sensing (IMU, F/T) to enable a 6-DOF arm to acquire and transport challenging liquid and granular foods, a key limitation in prior work.
  * Architected a decoupled control system in ROS 2 where the base arm performs high-level transport while the Articutool runs a local, high-frequency control loop to maintain tool orientation (e.g., leveling a spoon).
  * Designed a comprehensive experimental protocol with a novel two-scale setup to precisely and non-invasively quantify food acquisition, delivery, and spillage, establishing a rigorous validation framework for a journal or conference publication.
- **Predictive Safety Barriers for Human-Robot Collaboration**
  * Developed and evaluated optimization-based controllers using Control Barrier Functions (CBFs) to ensure provable safety for whole-body robot motion in dynamic environments with humans.
  * Implemented and benchmarked reactive and predictive (constant-velocity model) CBF-Quadratic Programs (CBF-QPs) in a MuJoCo simulation environment.
  * Established a comparative analysis framework to evaluate controller performance across key HRI metrics: safety (minimum distance), task efficiency (path deviation), and motion smoothness (jerk/acceleration).

INDUSTRY EXPERIENCE

Software Engineer June 2022 – July 2023
Google *Seattle, WA*

- Architected and implemented a robust data collection framework for health algorithm verification, ensuring compliance with strict data security protocols and accelerating development cycles.
- Conducted in-depth data analysis using Python (NumPy, Pandas) to identify and validate promising candidates for sensor fusion-based health algorithms.
- Characterized and de-risked potential failure conditions in algorithm performance during real-world application, improving model reliability.

Software Engineer October 2020 – June 2022
Sound Life Sciences *Seattle, WA*

- Developed a novel Android application employing sonar for non-contact, real-time breathing monitoring, forming a key component of a medical device that successfully achieved FDA 510(k) clearance.
- Designed and implemented comprehensive test suites for software verification and validation to ensure code quality, functionality, and regulatory compliance.