

Ricardo Digiovanni Frumento

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PROFESSIONAL SUMMARY

PhD student in Computer Science at the University of South Florida, specializing in robotic manipulation and grasping. Researcher at the Robot Perception and Action Lab (RPAL), advised by Dr. Yu Sun. Experienced in reinforcement learning, robotic control, and benchmarking methodologies. Proven record of peer-reviewed publications, presentations at top-tier conferences (CoRL, ICRA), and impactful teaching. Passionate about designing intelligent systems that bridge simulation and real-world robotics.

EDUCATION

University of South Florida

PhD in Computer Science

Aug 2023 – May 2028 (expected)

Relevant Coursework: Deep Reinforcement Learning, Autonomous Robots, Parallel Computing, Deep Learning

BS in Computer Science

Aug 2019 – May 2023

Relevant Coursework: Artificial Intelligence, Introduction to Robotics, Image Processing, Computational Geometry

PROFESSIONAL EXPERIENCE

University of South Florida

Research Assistant, Robot Perception and Action Lab (RPAL)

Jan 2023 – Present

- Conduct research in robotic manipulation and grasping, with emphasis on control strategies, reinforcement learning, and planning.
- Contribute to COMPARE benchmarking ecosystem to standardize learning evaluation in robotic manipulation.
- Co-author publications in IEEE RA-L, T-ASE, and CoRL; present research at international venues.

Teaching Assistant

Aug 2022 – Present

- Assist with upper-level CS courses: Artificial Intelligence, Deep Learning, Robotics, and Automata Theory.
- Mentor 150+ students, develop assessments, and lead review sessions to reinforce core computational concepts.

Peer Leader

Sep 2021 – Aug 2022

- Facilitated collaborative study groups in introductory CS courses, improving average exam performance by 12%.

Orientation Leader

Jun 2019 – Aug 2019

- Supported new students during onboarding; delivered sessions on academic tools and campus life.

PUBLICATIONS

- T. Chen, **R. Frumento**, et al. (2025). *Benchmarking Multi-Object Grasping*, IEEE Robotics and Automation Letters. doi:10.1109/LRA.2025.3595043
- Z. Ye, **R. Frumento**, Y. Sun. (2025). *Only Pick Once: Efficient Multi-Object Picking*, IEEE Transactions on Automation Science and Engineering. doi:10.1109/TASE.2025.3560956
- Norton, A., **Frumento, R. D.**, et al. (2024). *Standards for Open-Source Benchmarking in COMPARE*, CoRL 2024 Workshop. OpenReview
- **Frumento, R.** (2020). *Dynamical Systems and Markov Chains*, arXiv:2012.12442. arXiv

CONFERENCES & PRESENTATIONS

- **Presenter**, CoRL 2024 Workshop – Munich, Germany
- **Attendee**, ICRA 2025 – Atlanta, USA
- **Attendee**, FCRAR 2024 – Tallahassee, USA
- **Attendee**, CoRL 2023 – Atlanta, USA

SKILLS

Programming: Python, C++, C, MATLAB, Fortran

Frameworks: PyTorch, TensorFlow, OpenCV

Tools: Git, Docker, ROS, MuJoCo, CoppeliaSim

Operating Systems: Ubuntu/Linux

Soft Skills: Communication, Teaching, Team Collaboration, Research Documentation

Languages: Portuguese (Native), English (Fluent), Spanish (Fluent), French (Elementary)

CERTIFICATIONS

- SQL Essential Training — LinkedIn Learning (2024)
- Artificial Intelligence Foundations: Neural Networks — LinkedIn Learning (2023)
- Responsible Conduct of Research — CITI Program (2022)