

Evanns Morales-Cuadrado

U.S. Citizen

Robotics PhD Student Georgia Institute of Technology

CONTACT

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Github: <https://github.com/evannsm>

Research Website: <https://www.evannsmc.com/>

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TECHNICAL SKILLS

- **Programming Languages:** Python, C/C++, Matlab/Simulink
 - **Frameworks & Libraries:** JAX, PyTorch, acados, CasADi, ROS 2, PX4, ArduPilot
 - **Development & DevOps Tools:** Docker, Continuous Integration, Git/GitHub
 - **Hardware & Experimentation:** UAV assembly, repair, and deployment
 - **Motion-Capture:** OptiTrack and Vicon
 - **Languages:** Spanish (Native), English (Native)
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EDUCATION

Georgia Institute of Technology | 2022-2027

Ph.D. in Robotics

- GPA: 4.0/4.0
- Advisor: Dr. Samuel Coogan
- Goizueta Fellow

University of Texas at Arlington | 2018-2022

Honors Bachelor of Science in Electrical Engineering

Minor in Mathematics

Minor in Physics

Certificate in Unmanned Vehicle Systems

- GPA: 3.9/4.0 Summa Cum laude
 - Full National Merit Scholarship Awarded
 - Electrical Engineering Honors Scholar
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WORK EXPERIENCE

Graduate Research Assistant | FACTS Lab

August 2022 - Present

Georgia Institute of Technology

Atlanta, GA

- Advised by Dr. Samuel Coogan
- Implemented novel aggressive tracking control methods on quadrotor hardware
- Developed novel nonlinear control methods for safe autonomy
- Published and presented novel research at top conferences and journals in the fields of robotics and control theory

Teaching Assistant | Vertically Integrated Project in Robotics

January 2024 - Present

Georgia Institute of Technology

Atlanta, GA

- Aided professor in his instruction of this research-based course
- Provided promising undergraduates with guidance performing applied research in the field of robotics
- Taught control theoretical concepts in an accessible manner for undergraduates

Research Assistant | Autonomous Systems Lab

November 2021 - May 2022

University of Texas at Arlington

Arlington, TX

- Advised by Dr. Frank Lewis
- Received personal mentorship from a leading researcher in the field of controls and reinforcement learning (ranked 12th in the USA and 23rd in the world during my time in his lab)
- Aided graduate students on reinforcement learning research applied to quadrotor control

Teaching Assistant | Graduate-Level Intelligent Systems Course

January 2022 - May 2022

University of Texas at Arlington

Arlington, TX

- Aided professor in his instruction of the course
- Hosted review sessions for students in preparation for exams
- Gained teaching experience in a graduate-level course while still an undergraduate

Research Assistant | Dynamical Networks and Control Lab

University of Texas at Arlington

October 2019 - May 2022

Arlington, TX

- Advised by Dr. Yan Wan
 - Gained experience with Robot Operating System (ROS), OpenCV, and path planning
 - Original research in learning-based minimum time and energy path-planning for multi-vehicle systems
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SELECTED PUBLICATIONS

E. Morales-Cuadrado, C. Llanes, Y. Wardi and S. Coogan, “Newton-Raphson Flow for Aggressive Quadrotor Tracking Control.” *2024 American Control Conference (ACC)*

L. Baird, **E. Morales-Cuadrado**, and S. Coogan, “Runtime Assurance for Uncertain Systems from Interval Signal Temporal Logic.” Submitted to IEEE Transactions on Robotics. (*under revision*)

E. Morales-Cuadrado, L. Baird, Y. Wardi and S. Coogan, “Lightweight Tracking Control for Computationally Constrained Aerial Systems with the Newton-Raphson Method.” Submitted to IEEE Transactions on Control Systems Technology. *arXiv preprint available. (under revision)*

RESEARCH INTERESTS

- Safe Autonomy
 - Hardware Deployment
 - Unmanned Ground and Aerial Vehicles
 - Advanced Nonlinear Control
 - Learning-Based Control
 - Trajectory Generation and Planning
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OPEN-SOURCE CONTRIBUTIONS

- **PX4 Autopilot**: Contributed documentation improvements to the official PX4 Autopilot manual.
 - **Vicon4PX4**: Developed and open-sourced a ROS 2 C++ Vicon–PX4 interface enabling external vision fusion for indoor quadrotor flight experiments; adopted and showcased by Georgia Tech’s Indoor Flight Lab as part of its official codebase. Also created a parallel package for OptiTrack motion capture systems.
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SERVICE & LEADERSHIP

Co-Founder and President of Puerto Rican Student Association

August 2024 - Present

Georgia Institute of Technology

Atlanta, GA

- Addressed the need for an organization to help Puerto Rican students feel at home and stay connected to our culture
- Formed a three-member co-founder board and identified a faculty advisor
- Raised funds for the organization and recruited members from campus
- Hosted professional, social, and cultural events to meet the needs of the growing Puerto Rican student population at Georgia Tech

Undergraduate Research Mentor

August 2021 - May 2022

University of Texas at Arlington

Arlington, TX

- As the lead undergraduate student Dr. Frank Lewis’ Autonomous Systems Lab, I mentored junior undergrads in controls research and guided them on a research project in ground vehicle control
- Guided students in Robot Operating System, Python, Linux, and Control Systems

Teaching Assistant | Graduate-Level Intelligent Systems Course

January 2022 - May 2022

University of Texas at Arlington

Arlington, TX

- Aided professor in his instruction of the course
- Hosted review sessions for students in preparation for exams
- Graded homeworks, exams, and projects
- Gained teaching experience in a graduate-level course while still an undergraduate

Eta Kappa Nu Public Relations Chair & Circuits I Tutor

August 2020 - May 2022

University of Texas at Arlington

Arlington, TX

- Executive board member of UT Arlington’s IEEE-HKN chapter
- In charge of social media advertising for honor society’s events and outreach initiatives for the electrical engineering student body
- Volunteered to provide free tutoring as a service to electrical engineering students in the Circuits I course

**HONORS AND
AWARDS**

Top-3 Finalist at a Deep Learning Research Symposium Professor-sponsored award for novel research in deep learning and robotics	November 2023
Goizueta Fellowship at Georgia Tech Highly selective fellowship for graduate students of Latin-American descent	August 2022
Summa Cum Laude Honors at University of Texas at Arlington Exceptional academic distinction in top GPA tier for graduation honors	May 2022
Honors College Degree Requirements at University of Texas at Arlington Completed research projects in disparate fields throughout my undergraduate career with various professors and defended a senior capstone research project before the Honors College committee	December 2021
Electrical Engineering Honors Scholar at University of Texas at Arlington Inaugural member of the electrical engineering honors cohort	December 2021
IEEE-HKN International Electrical Engineering Honor Society Membership Selective undergraduate society recognizing outstanding academic achievement and community service	August 2021
Research Experience for Undergraduates Fellowship Recipient Fellowship to sponsor promising young undergraduate researchers	August 2020
Chance Vought Engineering and Science Endowment Scholarship Highly selective award given annually to three recipients across the entire College of Engineering	August 2020
Toray Composite Materials America Inc. Sons and Daughters Scholarship Academic scholarship awarded children of employees of Toray America	May 2019
James E. Casey Scholarship Recipient Academic scholarship awarded children of employees of UPS	January 2019
James R. Hoffa Memorial Scholarship Recipient Academic scholarship awarded children of Teamsters Union Members	May 2018
Grapevine, TX Rotary Club Scholarship Recipient Local rotary club scholarship for academic and civically-minded scholars	May 2018
National Hispanic Scholar Recognition of top national performers of Latin descent on the SAT	March 2018
National Merit Scholar Recognition of top national performers on the SAT	March 2018