

# Evanns Morales-Cuadrado

U.S. Citizen

## Robotics PhD Student Georgia Institute of Technology

### CONTACT

LinkedIn: <https://www.linkedin.com/in/evanns-morales/>

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

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

### RESEARCH INTERESTS

- Safe Autonomy
- Hardware Deployment
- Advanced Nonlinear Control
- Trajectory Generation and Planning
- Learning-Based Control
- Reachability Analysis
- Unmanned Ground and Aerial Vehicles

### 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

### RELEVANT WORK EXPERIENCE

#### Graduate Research Assistant at 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 for 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
- Provided hands-on mentoring in hardware implementations
- Inspired the next generation of robotics researchers

#### Research Assistant at 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 12<sup>th</sup> in the USA and 23<sup>rd</sup> in the world during my time in his lab)
- Aided graduate students on reinforcement learning research applied to quadrotor control

**Teaching Assistant for 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

**Research Assistant at Dynamical Networks and Control Lab**

October 2019 - May 2022

University of Texas at Arlington

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

**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)*

**SKILLS**

- **Software & Programming:** Python, C/C++, MATLAB/Simulink, ROS 2
- **Flight Control Systems:** PX4, ArduPilot
- **Hardware:** UAV building, repair, deployment
- **Motion Capture:** OptiTrack, Vicon
- **Languages:** Spanish (Native), English (Native), French, Portuguese

**SERVICE****Co-Founder and Vice President of Puerto Rican Student Association**

August 2024 - Present

Georgia Institute of Technology

Atlanta, GA

- Saw a need for an organization to make Puerto Rican students feel at home and remain connected to our culture and traditions
- 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 younger 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

**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 to the electrical engineering student body
- Volunteered to provide free tutoring as a service to electrical engineering students in the Circuits I course

<b>HONORS AND AWARDS</b>	<b>Top-3 Finalist at Deep Learning Research Symposium in CS7643 at Georgia Tech</b> Professor-sponsored award for novel research in deep learning and robotics	November 2023
	<b>Goizueta Fellowship at Georgia Tech</b> Highly selective fellowship for graduate students of Latin-American descent	August 2022
	<b>Summa Cum Laude Honors at University of Texas at Arlington</b> Arlington, TX	May 2022
	<b>Honors College Degree Requirements at University of Texas at Arlington</b> 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
	<b>Electrical Engineering Honors Scholar at University of Texas at Arlington</b> Inaugural member of the electrical engineering honors cohort	December 2021
	<b>IEEE-HKN International Electrical Engineering Honor Society Membership</b> Joined in first year of eligibility. Honors society for electrical engineering undergraduate juniors and seniors with a history academic and volunteering achievement	August 2021
	<b>Research Experience for Undergraduates Fellowship Recipient</b> Fellowship to sponsor promising young undergraduate researchers	August 2020
	<b>Chance Vought Engineering and Science Endowment Scholarship</b> Yearly scholarship for one sophomore, one junior, and one senior student in Engineering at the University of Texas at Arlington	August 2020
	<b>Toray Composite Materials America Inc. Sons and Daughters Scholarship</b> Academic scholarship awarded children of employees of Toray America	May 2019
	<b>James E. Casey Scholarship Recipient</b> Academic scholarship awarded children of employees of UPS	January 2019
	<b>James R. Hoffa Memorial Scholarship Recipient</b> Academic scholarship awarded children of Teamsters Union Members	May 2018
	<b>Grapevine, TX Rotary Club Scholarship Recipient</b> Local rotary club scholarship for academic and civically-minded scholars	May 2018
	<b>National Hispanic Recognition Program</b> Recognition of top national performers of Latin descent on the SAT and Pre-SAT	March 2018
	<b>National Merit Scholar</b> Recognition of top national performers on the SAT on the SAT and Pre-SAT	March 2018