

# Evanns Morales-Cuadrado

U.S. Citizen

# Robotics PhD Student

## Georgia Institute of Technology

### CONTACT

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

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

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

### 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)

### 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

### WORK EXPERIENCE

#### Graduate Research Assistant at FACTS Lab

August 2022 - Present

Atlanta, GA

Georgia Institute of Technology

- 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

Atlanta, GA

Georgia Institute of Technology

- 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

Arlington, TX

University of Texas at Arlington

- 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**

University of Texas at Arlington

- 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

January 2022 - May 2022

Arlington, TX

**Research Assistant at 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

**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

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

Georgia Institute of Technology

August 2024 - Present

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**

University of Texas at Arlington

August 2021 - May 2022

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

**Eta Kappa Nu - Public Relations Chair & Circuits I Tutor**

University of Texas at Arlington

August 2020 - May 2022

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 Deep Learning Research Symposium in CS7643 at Georgia Tech**  
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**  
Arlington, TX

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**  
Joined in first year of eligibility. Honors society for electrical engineering undergraduate juniors and seniors with a history academic and volunteering achievement

August 2021

**Research Experience for Undergraduates Fellowship Recipient**  
Fellowship to sponsor promising young undergraduate researchers

August 2020

**Chance Vought Engineering and Science Endowment Scholarship**  
Yearly scholarship for one sophomore, one junior, and one senior student in Engineering at the University of Texas at Arlington

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 Recognition Program**  
Recognition of top national performers of Latin descent on the SAT and Pre-SAT

March 2018

**National Merit Scholar**  
Recognition of top national performers on the SAT and Pre-SAT

March 2018