Nicolas Roberto San Miguel

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Education

Stanford University, School of Engineering   **Stanford, California**
Candidate for Master of Science in Aeronautics and Astronautics   Fall 2021 – Exp. Spring 2023
- Lockheed Martin Robert E. Gross Fellow
- Teaching Assistant for AA172: Guidance and Navigation, ENGR 15: Dynamics, ENGR 21: Systems

Georgia Institute of Technology, College of Engineering   **Atlanta, Georgia**
Bachelor of Science in Aerospace Engineering, Highest Honor   Fall 2017 – Spring 2021
- AE Honors Program; GPA: 3.89/4.00

Experience

Aero/Astro Research Assistant   **Stanford, California**
Stanford GPS Lab   January 2021 – Present
- Analyze GNSS data to aid the development of a low-cost continuous observation anti-spoofing monitor
- Applying basic supervised learning models to characterize thresholds between nominal, multipath, jamming, and spoofed signals. Contributed to multiple publications as first author

Research and Development Intern   **Albuquerque, New Mexico**
Sandia National Labs, Autonomy for Hypersonics   May 2020 – August 2021
- Modeled and tested a sounding rocket using a hardware-in-the-loop, real-time simulation
- Collaborated with other developers to reprogram embedded systems as part of a larger communications assembly for autonomous vehicle applications
- Worked to apply a deep-model reference adaptive control architecture to multi-rotor drones
- Helped develop a satellite modeling and data visualization program using Python and CesiumJS
- Explored the use of LoRa to demonstrate the benefits of sensor mesh networks for Global Security

Undergraduate Research Assistant   **Atlanta, Georgia**
Decision and Control Lab   August 2020 – May 2021
- Investigated the tradeoff between accuracy and robustness in perception-based deep learning

Student Researcher   **Atlanta, Georgia**
Electro-Optical Systems Lab, Georgia Tech Research Institute   March 2018 – May 2020
- Investigated multiple projects to model, develop, and optimize IRCM techniques
- Integrated aircraft survivability and CMWS equipment onto current and future vehicles
- Created a novel algorithm for object recognition using computer vision

Leadership

Makerspace Peer Instructor   **Atlanta, Georgia**
Interdisciplinary Commons, Georgia Institute of Technology   August 2019 – May 2021
- Volunteered weekly as an instructor to help students prototype their ideas and safely operate wood and metalworking tools, rapid prototyping, and electrical equipment

Co-Founder   **Fulton County, Georgia**
Fahrenheit 406 Hot Sauce Company   December 2019 – Present
- Co-created a small business centered around unique ghost pepper hot sauce formulations
- Grow peppers, create recipes, bottle, label, package, and market affordable sauce locally

Publications and Awards

San Miguel, Nicolas Roberto, et. al. *Calibrating RFI Detection Levels in a Low-Cost GNSS Monitor* In Proceedings of the IEEE/ION Position Location and Navigation Symposium (PLANS), Monterey, CA, April 2023.

Lo, Sherman, Chen, Yu-Hsuan, **San Miguel, Nicolas Roberto**, Walter, Todd and Akos, Dennis. *Examining Cross Frequency Interference Effects in Multi-Frequency GNSS Receivers* Published in Proceedings of the 2023 International Technical Meeting of The Institute of Navigation, Long Beach, CA, January 2023.

San Miguel, Nicolas Roberto, et. al. *Stress Testing of a Low-Cost GNSS RFI Monitor* Published in Proceedings of the 35th International Technical Meeting of The Satellite Division of the Institute of Navigation (ION GNSS+ 2022), Denver, CO, September 2022.

Stanford Aero/Astro Departmental Fellowship, Eagle Scout, Research Science Institute at MIT Scholar (2016)

Skills

Programs: ROS/Gazebo, Arduino/RasPi, C++, Julia, SolidWorks, MATLAB/Simulink, APEX Optics, Rhinoceros 3D, Simulink Real-Time, Linux, Python, Fortran, Private Pilot License, PADI Rescue Diver Certification
Languages: English – native, Spanish – fluent