

Clinton Enwerem

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Research Interests

Systems & Control, Statistical Learning, Robotics.

Education

- 2021-Date **PhD, Electrical & Computer Engineering**, *University of Maryland*, College Park, MD, USA
Expected May 2025. Advisors: Professor John S. Baras and Professor Calin Belta.
- 2014-2018 **B.Eng., Electrical Engineering**, *University of Nigeria*, Nsukka, Enugu, Nigeria
GPA: 3.84/4 (*First-Class Honors*). Emphasis: Control Theory.

Selected Publications

Preprints/Articles In Review

- 2024 **Clinton Enwerem**, Erfaun Noorani, John S. Baras, and Brian M. Sadler. Robust Stochastic Shortest-Path Planning via Risk-Sensitive Incremental Sampling, 2024. *To appear in the Proceedings of the 2024 Conference on Decision and Control (CDC)*.

In Conference Proceedings

- 2024 **Clinton Enwerem** and John S. Baras. Safe Collective Control under Noisy Inputs and Competing Constraints via Non-Smooth Barrier Functions, 2024. *In the Proceedings of the 2024 European Control Conference*.
- 2023 **Clinton Enwerem** and John S. Baras. Consensus-Based Leader-Follower Formation Tracking for Control-Affine Nonlinear Multiagent Systems. *9th International Conference on Control, Decision and Information Technologies*, 2023.

Journal Articles

- 2024 **Clinton Enwerem** and John S. Baras. Formation Tracking for a Class of Uncertain Multiagent Systems: A Distributed Kalman Filtering Approach. *IEEE Control Systems Letters*, volume 8, 2024.

Research Experience

Institute for Systems Research (ISR), University of Maryland

- 8/2021-Date **Graduate Research Assistant**
Research Foci: Safety-Critical Control, Risk-Sensitive Optimization, PGM-Based Learning.
- Electrical Engineering Department, University of Nigeria, Enugu, Nigeria
- 9/2018-3/2021 **Research Assistant**
Research Topics: Robust Control, Observer-Based Compensator Design, Feedback Linearization.
- 8-10/2017 **Undergraduate Research Assistant**
Research Topics: Feedback Control, Time-Delayed Systems, System Identification.

Professional Experience

Institute for Systems Research, College Park, MD

- Jun.-Aug. 2023 **Research Assistant**
Formulated a multi-agent safety-critical control problem as a chance-constrained and dynamic mathematical program, wrote software to validate approach, and prepared a research paper to summarize results. Supervisor: Professor John S. Baras.

ISR & University System of Maryland at Southern Maryland, California, MD

6.-8/2022 **Research Intern**

Worked in collaboration with the MATRIX Lab (<https://matrix.umd.edu>) on problems encompassing multi-agent cooperative control, formation control, and target tracking under sensor uncertainty. Supervisor: Dr. Danilo Romero.

Robotics & Artificial Intelligence Nigeria (RAIN), Ibadan, Nigeria

RAIN is Nigeria's premier robotics and AI research institute.

3/2020-2/2021 **Robotics Trainee**

Saw varied robotics and IoT projects through hardware and software development stages comprising computer-aided design, prototyping, firmware development, and product testing.

Honors & Awards

- 2022 2022-2023 Microsoft Diversity in Robotics & Autonomy PhD Fellowship.
- 2022 ROSCon Diversity Scholarship: Travel grant to attend ROSCon 2022 in Kyoto, Japan.
- 2021 Finalist, Engineers' League, Pan-African Robotics Competition, Rwanda.
- 2021 CIT Dean's Fellowship, Carnegie Mellon University, Africa Campus, Kigali, Rwanda.
- 2021 Dean's Fellowship, University of Maryland, College Park, MD, United States.
- 2020 Scholar, Stanford Exposure to Research & Graduate Education, Stanford University, CA, USA.
- 2020 EducationUSA Opportunity Funds Program Scholarship, U.S. Consulate General, Lagos, Nigeria.
- 2020 Sole Recipient (Nationwide), Door Foundation Leadlight Scholarship, RAIN.
- 2016-2018 Agbami Science & Technology Scholarship, Chevron: Merit-based undergraduate scholarship.
- 2015-2018 MTN Foundation Scholarship: Nationwide merit-based undergraduate scholarship.

Technical Skills

Robotics	<i>Tools:</i> ROS/ROS2, Gazebo/Ignition, RViz2. <i>Robots:</i> Crazyflie 2.X, Turtlebot2, UR5.	Statistics	JAGS.
Programming	Python, Matlab, C++, Bash, L ^A T _E X, Tk, R.	Optimization	Gurobi, Pyomo, Mosek.
Frameworks	Jupyter, TensorFlow, OpenCV.	Web	HTML, CSS, JS, Markdown.
Engineering	MCUs, Prototyping, CAD, Simulink.	OS	Linux, Windows.
		Version Control	git, GitHub, GitLab.

Talks

- 2024 "Safe Collective Control under Noisy Inputs and Competing Constraints via Nonsmooth Barrier Functions." Delivered at the European Control Conference, Stockholm, Sweden.
- 2023 "Consensus-Based Leader-Follower Formation Tracking for Control-Affine Nonlinear Multiagent Systems." Delivered at the 9th International Conference on Control, Decision, and Information Technologies.

Relevant Courses

Doctoral

- Fall 2023 Decision-Making for Robotics.
- Spring 2023 Network Control Systems, Decision Making Under Uncertainty: RL, Control, & Games.
- Fall 2022 Random Processes in Communication & Control, Advanced Digital Signal Processing.
- Spring 2022 Nonlinear Control Systems, Optimal Control.
- Fall 2021 System Theory, Convex Optimization.

Open Courseware

- Summer 2023 Bayesian Statistics I & II by the University of California San Diego (*with honors*).
- Summer 2022 Autonomous Navigation for Flying Robots by the Technical University of Munich.
- Spring 2022 Principles of Robot Autonomy I & II by Stanford University.

Academic Service

- 2023 Peer Reviewer: Heliyon, MED'23, ECC'24.