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 2026. 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	*Tools*: ROS/ROS2, Gazebo/Ignition, RViz2.	Statistics	JAGS.
	Robots: Crazyflie 2.X, Turtlebot2, UR5.	Optimization	Gurobi, Pyomo, Mosek.
Programming	Python, Matlab, C++, Bash, LaTeX, Tk, R.	Web	HTML, CSS, JS, Markdown.
Frameworks	Jupyter, TensorFlow, OpenCV.	OS	Linux, Windows.
Engineering	MCUs, Prototyping, CAD, Simulink.	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.