Clinton Enwerem

Academic CV

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GitHub *LinkedIn* *Google Scholar*

Research Interests

Systems & Control, Reinforcement Learning, Robotics.

Education

2021-Date **PhD, Electrical & Computer Engineering**, *University of Maryland*, College Park, MD, USA
Expected Spring 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**, Aniruddh G Puranic, John S Baras, and Calin Belta. Safety-Aware Reinforcement Learning via Risk-Sensitive Quantile Regression Deep Q-Networks, 2024.

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, Robust Motion Planning, Risk-Sensitive Reinforcement 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

2024 IEEE CSS Student Travel and Workshop Support: Conference travel award to attend CDC'24.
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(2), Gazebo/Ignition, RViz2, Isaac Sim.
Robots: Crazyflie 2.X, Turtlebot2, UR5.
Programming Python, Matlab, C++, Bash, LaTeX, Tk, R.
Frameworks Jupyter, TensorFlow, OpenCV, PyTorch.
Engineering MCUs, Prototyping, CAD, Simulink.
Statistics JAGS.
Optimization Gurobi, Pyomo, Mosek.
Web HTML, CSS, JS, Markdown.
RL Sandboxes Safety Gymnasium, OpenAI Gym.
Version Control git, GitHub, GitLab.

Talks

2024 "Robust Stochastic Shortest-Path Planning via Risk-Sensitive Incremental Sampling." Delivered at the 63rd Conference on Decision & Control, Milan, Italy.
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 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

2023-2024 Peer Reviewer: Heliyon, MED'23, ECC'24, ACC'25, L4DC'25.