

CLINTON ENWEREM

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PROFESSIONAL SUMMARY

Electrical Engineer & Robotics Researcher with 4+ years of experience in:

- Safe, robust, optimization-based motion planning and control for robotics (wheeled mobile robots and quadrotors).
 - Deep reinforcement learning applications in mobile robotics.
 - HIL and SIL robot hardware/software development using ROS(2), C++, Python, and Docker.
- My research focuses on simulation-based, practically-grounded motion planning and control techniques for critical robot navigation problems.

EDUCATION

University of Maryland, College Park

Ph.D., Electrical & Computer Engineering. Expected Spring 2026.

MD, USA

Aug. 2021 – Present

University of Nigeria, Nsukka

Bachelor of Engineering, Electrical Engineering (Control Theory Emphasis). GPA: 3.84.

Enugu, Nigeria

Aug. 2018

WORK EXPERIENCE

Graduate Research Assistant

Institute for Systems Research (ISR), University of Maryland

Aug. 2021 - Present

College Park, MD

- Model and solve motion planning and control optimization problems using Pyomo, Ipopt, Gurobi, and Mosek.
- Develop Python, MATLAB, and C++ scripts to test and validate robust motion planning and control algorithms.
- Automate experiment workflows by writing custom YAML/XML configuration files and shell scripts (Bash, Zsh).
- Publish research findings in conference/journal papers, technical reports, and presentations.

Research Intern

ISR & University System of Maryland at Southern Maryland (USMSM)

Jun. - Aug. 2022

California, MD

- Conducted system identification experiments to validate a twelve-dimensional state-space linearized model of a Crazyflie 2.1 quadrotor.
- Developed a Lagrangian-based optimal swarm control algorithm for coordinating 10 Crazyflie quadrotors tasked with formation tracking under localization uncertainty.
- Wrote ROS-compliant and performant software (Python) implementing the control algorithm, and prepared a research paper and a technical report to summarize research findings.

Robotics Trainee

Robotics & Artificial Intelligence Nigeria

Mar. 2020 – Feb. 2021

Ibadan, Nigeria

- Developed high-performance and ROS-compliant visual SLAM and control software for a modular differential-drive ground mobile robot.

PROJECTS

Risk-Regularized QR-DQN for Safe RL | Python, TensorFlow, SafetyGymnasium

A risk-sensitive quantile regression DQN algorithm for safety-aware distributional RL in dynamic environments.

Nov. – Dec. 2024

Risk-Aware Motion Planning under Static Map Ambiguity | C++, ROS2, Bash

A CVaR-based (global) path planning algorithm for robust navigation under static map uncertainty.

May – Jun. 2024

Robust Motion Planning under Stochastic Model Uncertainty (Paper) | Python, Bash

A log-linear and (CVaR-based) risk-aware adaptation of the RRT algorithm.*

Jan. – Mar. 2024

Robust Autonomous Navigation of a Delivery Robot (Code) | Python, C++, ROS

ROS package for real-time collision avoidance with IMU, camera, and LiDAR. Africa-wide competition finalist.

Jun. – Aug. 2021

TECHNICAL SKILLS

Robotics

ROS/ROS2, Gazebo, RViz, MoveIt!, Webots

ML Packages

Tensorflow, PyTorch, OpenCV

Programming

Matlab, C++, Python, Bash, \LaTeX

Optimization

Gurobi, Pyomo, Mosek, Ipopt

RL Sandboxes

PyBullet, Safety-Gymnasium, Open-AI Gym

Dev Tools

git, GitHub, GitLab, Docker

REFERENCES

Available on request.