

Miraclin Franklin Charles

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EDUCATION

- The Ohio State University**, Columbus, Ohio, USA 2024
Master of Science in Electrical and Computer Engineering
Courses: Wireless Networks, Digital Signal Processing, Project Management, Autonomy of Vehicles, Intro to Data Mining, Intelligent Control, Computer Communication Networks.
- Vellore Institute of Technology, VIT**, India 2022
Master of Technology (Communication Engineering)
- Anna University**, India 2019
Bachelor of Engineering (Electronics & Communication Engineering)

PROFESSIONAL EXPERIENCE

- EcoCAR EV Challenge Center for Automotive Research (Graduate Research Associate)** *Jan 2024-May 2024*
Project manager for the EcoCAR EV challenge team, managing technical and non-technical sub-teams which involves structuring teams, prioritizing tasks and optimizing workflows using agile project management tools.
- EcoCAR EV Challenge-Center for Automotive Research-The Ohio State University** *Aug 2023-Oct 2023*
Propulsion controls and modelling sub team member, worked on feature development in MATLAB and Simulink
- The Ohio State University (Graduate Teaching Assistant)** *Jan 2023-May 2023*
Teaching of system integration and control course in the Mechanical and Aerospace Engineering department.
- Nokia Solutions and Networks (Student Intern)** *Aug 2021- May 2022*
Worked in legacy systems and handled security testing in modernized software architecture and automation regression suites using python.

TECHNICAL PROFICIENCY

C, C++, Python, MATLAB, Simulink, LabVIEW, CST Studio Suite, AWR, VMWARE, Netsim, Opti system, ROS.

ACADEMIC PROJECTS

- **MS Final Project in Evaluation of Battery Degradation in EV's using SUMO, Python**
Optimizing electric vehicle performance and battery degradation: Insights from SUMO simulation analysis. Worked on SUMO software to visualize and evaluate EV battery characteristics, SOC and integration with rain flow algorithm.
- **TRC: Advanced Mobility Radar Sensor**
Integration of a radar sensor using ROS for object detection and created a visualization tool to evaluate if the system is detecting the objects.
- **2X4 Antenna Array for Radiolocation Application using CST Studio**
Designed a 2x4 MIMO antenna using two different radiating elements with the help of FR-4 substrate and compared based on directivity, gain, VSWR, and efficiency.
- **Device Discovery Methods in D2D Communications for 5G Communications Systems using MATLAB**
Utilized MATLAB to find a suitable solution for the discovery and selection of D2D pairs using maximum SINR with a limit on the distance of discovery=500m algorithm (MSLA) with respect to the number of devices.
- **Performance Evaluation of Error-Correcting Techniques for OFDM Systems using MATLAB**
Utilized MATLAB for investigation of the performance of different error-correcting techniques for OFDM systems. Simulations are performed to evaluate the considered techniques for different channel conditions.
- **Reducing Peak to Average Power Ratio of OFDM by Using Threshold Selected Mapping using MATLAB**
Examined the PAPR reduction capability of SLM through simulation on MATLAB.

RESEARCH PUBLICATIONS

- **Investigation of Epileptic Seizures and Sleep Disturbance**
Journal: Advancing the Investigation and Treatment of Sleep Disorders using AI, IGI Global.
To detect epilepsy in patients using raw EEG datasets by processing it using MATLAB toolbox
- **Differently abled person tracks and follow robot for luggage transport**
Journal: Proceedings of the International Conference on Recent Engineering Technology Management 2019, ISBN 978-9381288-81-4. To aid the differently abled person to track their luggage with the help of Turtlebot-3 using a LIDAR sensor and robot operating system to assist the robot to track and follow.

OTHER SKILLS

- **Control Systems:** Control systems and state space functions, circuit design, PID controllers, programmable logic controllers.
- **Simulation and Automation:** MATLAB/Simulink, SUMO, Python, sensors, area detectors.
- **Design:** Adobe Premier Pro, Adobe After Effects.
- **Programming Skills:** C, C++, Python.
- **Project Management Skills:** Project plan, FMEA, risk mitigation, agile methodologies, scrum framework.
- **MS Office Skills:** PowerPoint, Word, Excel.

AWARDS

- “Innovation, Technology & Knowledge Economy” award by The Institution of Engineers, India. *2017*
- Certificate of Merit by The Institution of Engineers, India *2017*

WORKSHOPS

- EcoCAR EV Challenge Year 2 Workshop at MathWorks,AAM. *2023*