# JESUDARA OMIDOKUN (Dara)


**Personal Info**

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https://github.com/jomidokunMain


## Relevant Projects

- Designed a ground rover implemented with a TI mm-Wave radar sensor for geographical acquisition in disaster rescue applications that produced data using point cloud information on Linux platform.
- Accomplished building a Bluetooth Arduino-controlled car, implemented with a photoresistor, potentiometer, ultrasonic sensor, and wireless Bluetooth RF transceiver.

## Professional Experience

**University of Michigan Department of Industrial and Manufacturing System Engineering**

***Jan 2022 – Present***

Dearborn, Michigan

*Research Assistant (Computer Vision)*

- Designed a 3D model to identify human body shape and anthropometric details identification from RGB and RGBD images with 15 % prediction accuracy compared to other state-of-the-art models.
- Employed object identification and detection algorithms to investigate the effect of the weight of specified objects on anthropometric information on the human model.
- Designed a system that used a computer vision model to drive a biomechanical model.
- Design project website using Python, HTML, and JavaScript

**Hitachi America, Ltd** ***Jan 2023 – May 2023***

Farmington Hills, Michigan

*R&D Automotive Intern, Connected Automated Vehicle*

- Designed a system for lane-level vehicle count at an Intersection for connected and autonomous vehicle data.
- Designed a CNN network to aid lane detection on degraded lane marker roads.
- Integrated lane-level vehicle count algorithms to work across network and message protocols (TCP, UDP, HTTP, RTSP, RTMP, and MQTT).
- Designed a system to test the algorithm at a vehicle testing facility (Mcity).
- Combined the lane detection neural network and vehicle detection (Yolov5) to implement a vehicle lane count system.

**University of Michigan Department of Electrical and Computer Engineering**

***Aug 2021 – Dec 2022***

Dearborn, Michigan

*Research Assistant (Robotic)*

- Designed an Open-Source robotic car architecture for research and education purposes (OSCAR).
- Designed a machine-learning-based algorithm for constructing a cost-effective platform for a full-scale vehicle.
- Integrated a microcontroller program handling low-to-middle level motor controls, a graphics processing units (GPU) laptop capable of handling macros, and deep-learning-based algorithms with a high-level depth camera sensor.
- Designed a high-level vehicle system capable of accommodating a human driver to collect driving data (RGB images and its control signals) using the data from a neural network (CNN).

**Massachusetts Institute of Technology, Canadian Space Agency, UMES, Princess Anne, MD**

***Microgravity Testbed Payload Design (Principal Investigator: Dr. Aaron Persad)}.***

***May 2018 – August 2018***

*Microgravity Research Intern*

- Designed free fall microgravity experiment involving free body rotation in under one month and at a 30 % low cost to other teams.
- Developed tools to predict spin states of objects using intermediate axis theorem on MATLAB and Autodesk Fusion.
- Prepared documentation reports on the experiment and a compliance check report to ensure the experiment met the requirements acceptable to fly.

## Education

- **Master of Science in Electrical Engineering**
  - University of Michigan – Dearborn, MI.
- **Bachelor of Science: Engineering Specialization Electrical Engineering**
  - University of Maryland Eastern Shore (UMES) – Princess Anne, MD
  - GPA: 3.8/4.0 Summa cum laude

## Relevant Skills

Extensive CAD knowledge, Breadboard prototype development, Knowledgeable in PCBA, Soldering, Coding Languages (MATLAB, SIMULINK, Python, R, C, C++), Deep Learning (Keres, PyTorch), ROS, ROS2, FPGA (VHDL, Verilog, C HLS), Leadership, Punctuality, Public Speaking, AWS, Docker.

## Relevant Course

Engineering: Calculus, Controls Systems, Basic Circuits Theory, Analog, and Digital Electronic, Signal and System, Digital Logic, Electromagnetic Theory, Computer Aid Drawing, Communication System, Machine Learning, Computer Vision, Digital Signal Processing, Computer Architecture, Embedded Signal Process and Control.

## Publications

Benjamin K Barnes, **Jesudara Omidokun**, Eguono Omagamre, Dominguez, and Kausik S Das**.Plasma Generation by household microwave oven for surface modification and other emerging applications**. American Journal of Physics.

## Organizations and Honors

- National Society of black engineers (NSBE).
- Richard A Henson Honors Program Scholarship Recipient.
- IEEE EMC society.