

# Obafemi Jinadu

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## RESEARCH INTEREST

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Computer Vision, Multimodal Understanding, Vision-language Models, Generative AI

## EDUCATION

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**Tufts University**, MA, USA

*Sep. 2021 - Present*

**Ph.D. Electrical and Computer Engineering**

GPA: 4.0/4.0

Advisor: Prof. Karen Panetta

Relevant Coursework (grades): Computer Vision, Software Engineering (A+), Machine-centric programming in C/C++ (A+).

**Tufts University**, MA, USA

*Sep. 2021 - May 2023*

**MS. Electrical and Computer Engineering**

GPA: 3.92/4.0

Advisor: Prof. Karen Panetta

Relevant Coursework (grades): Machine Learning (A+), Statistical Pattern Recognition (A+), Operating Systems (A+), Computer Engineering (A)

**Obafemi Awolowo University**, Ile-ife, Nigeria

*Sep. 2014 - Dec. 2019*

**B.Sc. Electronic and Electrical Engineering** GPA: 4.31/5.0 (class rank: top 6% in Class of 135)

## RESEARCH EXPERIENCE

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**Tufts University**, MA, USA

Sep. 2021 - present

*Graduate Research Assistant - Vision & Sensing Systems Laboratory*

- Developed a semantic segmentation algorithm for post-disaster building damage assessment using satellite imagery data.
- Developed an animal pose estimation algorithm based on High-Resolution network (HRNet) and Vision Transformer (ViT) architectures using semi-supervised learning techniques. Curating an accompanying animal pose estimation dataset.
- Developed a deep learning-based real-time speed and traffic density estimation algorithm.
- Developed a real-time machine learning weight estimation framework utilizing data from shoe insoles, motivated by the rapid weight gain due to high-fluid retention health conditions in the elderly.
- Working on curating an image-text pair dataset toward multimodal learning for text-based object detection tailored to the field of transportation.
- Working on image enhancement and synthetic image-text data generation techniques using generative AI models such as stable diffusion for vision and transformer-based large language models for text.

**Obafemi Awolowo University**, Ile-Ife

Apr. - Jun 2017

*Undergraduate Research Assistant*

- Performed Verification and Validation of Physical Layouts using Electric-VLSI Design Package.

## PROFESSIONAL EXPERIENCE

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**KPMG**, Nigeria

Jan. - Jul. 2021

*Experienced Data Scientist / ML Engineer*

- Developed a customer recommendation system using unsupervised machine learning and data anonymization techniques.

- Developed a robotic process automation pipeline that extracts information daily and makes key decisions based on the information, eliminating the need for human intervention.
- Developed a model that tracks company staff utilization, revenue generated by staff, team, and department in real-time.

## KPMG, Nigeria

Mar. 2020 - Jan. 2021

*Data Scientist / ML Engineer*

- Developed a COVID-19 Risk assessment tool with machine learning algorithms.
- Worked on a Twitter sentiment analysis models for clients to optimize marketing strategies and improve customer satisfaction by monitoring brand perception.
- Developed a COVID-19 Model to track daily infection trends and monitor its impact on the Nigerian Economy.

## PUBLICATIONS

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### Conference Papers & Presentations

- Oludare, V., Kezebou, L., **Jinadu, O.**, Panetta, K. and Agaian, S., 2022, May. Attention-based two-stream high-resolution networks for building damage assessment from satellite imagery. In Multimodal Image Exploitation and Learning 2022 (Vol. 12100, pp. 224-239). SPIE
- **Jinadu, O.**, Oludare, V., Rajeev, S., Kezebou, L., Panetta, K. and Agaian, S., 2023, June. Instant-level vehicle speed and traffic density estimation using deep neural network. In Multimodal Image Exploitation and Learning 2023 (Vol. 12526, pp. 125-138). SPIE.

### Journal Papers

- Sanghavi, F., **Jinadu, O.**, Oludare, V., Panetta, K., Kezebou, L. and Roberts, S.B., 2023. An Individualized Machine Learning Approach for Human Body Weight Estimation Using Smart Shoe Insoles. Sensors, 23(17), p.7418.

## SOFTWARE & PROGRAMMING LANGUAGES

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<b>Computer Languages</b>	Python, C, C++, CUDA, MATLAB
<b>Software &amp; Tools</b>	PyTorch, TensorFlow, OpenCV, Singularity(HPC), Scikit-image.
<b>Others</b>	Git, Jira, PowerBI, LaTeX, UiPath.

## HONOR & AWARDS

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- KPMG's Q1 Signals Repository Global Hackathon (3rd Place Winners) – Led the KPMG Nigeria team. -value: \$500 Feb. 2021.
- Petroleum Technology Development Fund (PTDF) National Scholarship  
- cumm value: \$10,000 2016 - 2019
- Chevron/NNPC Joint Venture National Scholarship Merit Award - cumm value: \$2000 2015 - 2019
- Three top Students in Applied Electricity, Command Day Secondary School 2011.

## LEADERSHIP & EXTRACURRICULAR

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- IEEE-HKN (Eta Kappa Nu) Board of Governors member - 2024 Student Governor.
- Journal Reviewer for IEEE Transactions on Artificial Intelligence.
- Journal Reviewer for IEEE Transactions on Systems, Man and Cybernetics: Systems.
- Reviewer for 2022 Virtual IEEE International Symposium on Technologies for Homeland Security.
- Supervising Computer Science and Data Science Tufts Seniors on their final year capstone projects.
- Societies: IEEE, NSBE, Black in AI (BAI), SPIE.