Obafemi Jinadu

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RESEARCH INTEREST

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

EDUCATION

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 (A+), Software Engineering (A+), Machnine-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

Tufts University, MA, USA Sep. 2021 - present
Graduate Research Assistant - Vision & Sensing Systems Laboratory

- Working on curating an image-text pair, and eye-tracking dataset toward multimodal learning for text-based object detection tailored to the field of transportation - working on publication.
- Working on image enhancement and synthetic image-text data generation techniques using generative AI models such as diffusion for vision and transformer-based large language models for text.
- 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.

Obafemi Awolowo University, Ile-Ife Apr. - Jun 2017
Undergraduate Research Assistant

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

PUBLICATIONS

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.

PROFESSIONAL EXPERIENCE

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.

SOFTWARE & PROGRAMMING LANGUAGES

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

HONOR & AWARDS

- School of Engineering Outstanding Academic Scholarship Award - Tufts University Mar. 2024.
- 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: $2,000 2015 - 2019
- Three top Students in Applied Electricity, Command Day Secondary School 2011.

LEADERSHIP & EXTRACURICULAR

- 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.