STEVEN KOLAWOLE

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EDUCATION

2017 – 2022	BSc. Computer Science
	Federal University of Agriculture, Abeokuta
	GPA: 4.2 / 5.0

RESEARCH EXPERIENCE

2020 – Pres.

Lead Investigator
Project Title: Sign-to-Speech Model for Sign Language Understanding: A Case Study of Nigerian Sign Language
Project Status: Publication to appear
Advisor: Dr. Babatunde Olorisade, Senior Lecturer, Cardiff Metropolitan University
Synopsis: We developed a lightweight sign-to-speech machine learning application that works in real-time to reduce the communication barrier between the hearing impaired community and the larger society with a focus on sub-Saharan Africa, which is the region with most cases of hearing disabilities.
Duties: Conceptualized the project idea, facilitated the creation of low-resource sign language datasets, reviewed the existing literature, performed the experiments, built the application, wrote the research paper draft.

2021 – Pres.

Co-Investigator
Project Title: Explainable Image Classification for Nigerian Sign Language
Project Status: In review
Advisor: Taiwo Togun, PhD, Yale University
Synopsis: We investigate sign-to-speech models' performances by providing an array of local model-agnostic methods to help understand the sign language from an image classification perspective.
Duties: Reviewed existing literature, co-wrote the research paper, curated the dataset, wrote modeling codes.

2021 – Pres.

Research Assistant
Research Interest: Continual learning on resource-efficient pre-trained models
Project Status: In progress
Advisor: Nils Rethmeier, PhD Researcher, German Research Center for AI (DFKI)
Synopsis: We investigate the performance accuracy and efficiency of resource-efficient pre-trained models (CLESS) against large, self-supervised models, when fine-tuned on finely-grained tasks.
Duties: Reviews literature, procures dataset, writes scripts for analysis, preprocessing, and modeling.

RESEARCH-RELATED PROFESSIONAL DEVELOPMENT

2021 – Pres.

Member
Lab: MLCollective Research Community

<u>Core Mentors:</u> Rosanne Liu, Jason Yosinski
<u>Reading Groups' affiliations:</u> CV and NLP subgroups
<u>Duties:</u> Participates in the weekly investigations and reviews of top literature including role-playing in a Reviewer's, a Researcher's, and a Hacker's capacities; Participates in our research jams, reviews community members' research works, and provides constructive feedback and collaborations.

PUBLICATIONS

Steven Kolawole, Opeyemi Osakuade, Nayan Saxena, Babatunde Kazeem Olorisade. Sign-to-Speech Model for Sign Language Understanding: A Case Study of Nigerian Sign Language. *To appear at* NeurIPS (Conference on Neural Information Processing Systems) 2021

Victor Ojewale, **Steven Kolawole**, Taiwo Togun. Explainable Image Classification for Nigerian Sign Language. *In review at* The 5th Black in AI Workshop @ NeurIPS 2021

TALKS

2021	**ML4D Workshop, NeurIPS 2021** To deliver an oral presentation of my accepted paper "*Sign-to-Speech Model for Sign Language Understanding: A Case Study of Nigerian Sign Language*" at the workshop.
2021	**PyData Global 2021** Delivered a talk on "*Building a Sign-to-Speech prototype with YOLOv5 and Single-State-Detector: How it happened & What I learned*"
2021	**MLCollective's Open Collab Research Jam #4** Presented progress on my research work: "*Sign-to-Speech Modeling for Sign Language Understanding using Object Detection: A Case Study of Nigerian Sign Language*"
2021	**MLCollective's Open Collab Research Jam #3** Delivered a research talk on my award-winning project: "*Sign Language-to-Speech*"
2021	**GDG Abeokuta, I/O Extended 2021** Delivered a talk on: "*I/O '21 Recap: Advancing AI*"
2020, 2021	**PyCon APAC 2021, EuroPython 2021, Python Web Conference 2021, Conf42 Python 2021, PyData Global 2020, PyCon Africa 2020** Delivered several talks on: "*Streamlit: The Fastest Way to build Data Apps*" at multiple conferences.

HONOURS, AWARDS & RECOGNITION

2021	**2nd Best Poster Award, Data Science Nigeria's AI Bootcamp 2021** Presented a poster on my research project "*Driving an inclusive society: Sign-to-Speech modeling for Sign Language Understanding*".
2021	**Winner, DeepQuest AI Challenge**

Built an E2E working prototype that uses Artificial intelligence to detect sign language meanings in images/videos and generate an equivalent voice of words communicated by the sign language.

2020	**1st Runner-up, Mr. Algorithm Award, DSN AI Bootcamp 2020** In recognition of the most outstanding male starlet in Nigeria's AI community who not only strives to be the best in Artificial Intelligence but also invests in others through knowledge sharing.
2020	**Scholar, MTN Foundation Science & Technology Scholarship Scheme** Recognizes and rewards the academic excellence of high-performing, low-income full-time students studying in public tertiary institutions in Nigeria. Success rate: 1.8%
2020	**Fellow, The Young Professionals Bootcamp** The Young Professionals Bootcamp (YPB) is an in-residence program for high potential 20-25-year-olds to learn world-class practical training, inspire innovation, drive success in the marketplace and ultimately lead to the transformation of the Nigerian economy. Success rate: 3.6%
2020	**Finalist, "Can You Hack the Future" Ideathon** Built a collaborative-based Recommender System that predicts nearest locations in need of transport for bike-hailing companies' riders in Lagos. Rank: 5 out of 40 teams.
2019	**Gold Medal Winner, NaijaHacks '19** One of the two team members of the AgroAI team - built a mobile application that helps farmers detect plant diseases using Computer Vision. Rank: top 12 out of 336 teams at the final Expo day.

WORK EXPERIENCE

2021 - Pres.	**AI Research Engineer** Organization: Rectangle AI Duties: Taking full responsibilities for the company products' development cycle; Working across domains including Vision, Audio, NLP, and Reinforcement Learning.
2021	**Data Science Intern** Organization: SeqHub Analytics LLC Duties: Fine-tuned mT5 (multilingual Text-to-Text Transformer) for machine translation on low-resource Nigerian ethnical languages; Worked on new capabilities deployed as microservices - for the company's flagship conversational AI agent modeled as a teaching assistant - including a teacher-student report's edit prediction functionality using Levenshtein Edit Distance; Built a dockerized dashboard app that automates the analytics part of firm's Emotional Analytics workflow boosting development speed by 45%.
2020 - 2021	**Data Scientist (Contract)** Organization: Scitylana NG

Duties: Under NDA. Worked on projects ranging from propensity modeling to end-to-end Machine Learning applications built from start to finish single-handedly.

2020	**Machine Learning Intern**

Organization: Rural Farmers Hub
Duties: Annotated farm boundaries via satellite imageries; Built a model using Forest algorithms for soil nutrient-sensing for NPK to predict best crops to grow on certain soils, with up to 87% accuracy.

2019   **Software Engineering Intern (Backend & Machine Learning)**
Organization: HNG Internship
Duties: Built db models & API endpoints for authentication, reviews, file uploads & storage (in Amazon S3) for apps usage; Worked on a Trainer SDK to correct exercises postures using Geometric algorithms and a model of DCNNs & OpenPose.

VOLUNTEERING & COMMUNITY SERVICES

2021   **Community Lead**
Organization: Google Developer Student Club, FUNAAB
Duties: Conducting online and offline technical & soft-skills training impacting over 3000 students, with the bid to bridge the gap between learning and becoming industry-grade.

2021   **Machine Learning Tutor**
Organization: AI Invasion 2021, Data Science Nigeria
Duties: Facilitated classes of more than 100 participants for 5 days of full machine learning immersion.

2020 - 2021   **Data Science Mentor**
Organization: She Code Africa Mentorship Program
Duties: Prepared an immersive, intermediate-to-professional curriculum for female mentees and mentored them accordingly.

2019 - 2021   **Campus Lead**
Organization: Artificial Intelligence Plus, FUNAAB
Duties: Evangelized AI, organized multiple Python and ML training, as well as soft skills training, to groomed students to become workpool-standard for recruitment.

2020   **Deputy City Lead**
Organization: Data Science Nigeria
Duties: Organized ML meetups for AI enthusiasts while also overseeing Data Science Nigeria's operations in the city.

INDEPENDENT COURSEWORK

Deep Learning Specialization - Deeplearning.ai
CS 224n, NLP for Deep Learning - Stanford University
CS 11-747, Neural Networks for NLP - Carnegie Mellon University
TensorFlow: Advanced Techniques Specialization - Deeplearning.ai

TECHNICAL STRENGTHS

Machine Learning:	Scikit-Learn, TensorFlow, Pytorch, OpenCV, NLTK
Data Science:	SQL, Pandas, Matplotlib, Seaborn, Folium, Plotly, Tableau, Streamlit
Software Engineering:	Flask, Django, Linux, SQL, ElasticSearch, GraphQL, Docker, CI/CD
Others:	Open-Source Development, Web Scraping, Cloud Computing with GCP and AWS

PROFESSIONAL & ACADEMIC AFFILIATIONS

2021 – Pres.	Student Member. Afrisnet: Africa STEM Network
2020 – Pres.	Student Member. Black in AI (BAI)
2020 – Pres.	Student Member. Masakhane NLP Group
2019 – Pres.	AI+ Community Member. Data Science Nigeria
2017 – Pres.	Student Member. National Association of Computing Students

REFERENCES

References available upon request.