# Sewade **Ogun**

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## Work Experience

### INRIA
*Nancy, France*

PH.D STUDENT
*Oct. 2021 - Sept. 2024*

- Built and trained generative models such as Normalizing flows, GANS, and diffusion models, for modelling speech and acoustic representations for text-to-speech and voice conversion,
- Trained Transformer models like BERT and RoBERTa for language modelling in low-resource domains,
- Built self-supervised and weakly-supervised ASR models based on wav2vec and Whisper for improving transcription accuracy for accented speech.
- Curated high-quality TTS and ASR datasets for African accents.
- Taught the speech corpus course at the NLP masters at the University of Lorraine.
- Skills: model and experimental design, technical documentation, technical writing and presentation, and teaching.

### African Institute for Mathematical Sciences
*Mbour, Senegal*

RESEARCH AND TEACHING ASSISTANT
*Oct. 2020 - Oct. 2021*

- Built self-supervised and weakly-supervised ASR models based on wav2vec, CPC, and QuartzNet, for modelling speech representations for some African languages in the weakly-supervised setting,
- Taught several machine learning tutorials and coding sessions for the African Masters in Machine Intelligence (AMMI) program.
- Skills: deep learning research, teaching and mentoring

### Ubenwa
*Canada (Remote)*

MACHINE LEARNING RESEARCH ENGINEER
*Mar. 2021 - August. 2021*

- Developed and deployed an accurate baby cry activity detection (CAD) model for detecting and segmenting infant cry signals in audio.
- Developed AI model for detecting asphyxia from infant cry.
- Skills: AI model design and deployment, and technical documentation.

### Proto
*Canada (Remote)*

NLP ENGINEER
*Feb. 2020 - Nov. 2020*

- Implemented a conversational AI chatbot for improved customer satisfaction.
- Conducted text annotation and translation for Nigerian languages (Yoruba and Nigerian Pidgin).
- Skills: NLP model training and design, text translation.

### Flour Mills of Nigeria Plc
*Lagos, Nigeria*

PREDICTIVE ENGINEER
*Apr. 2017 - Oct. 2019*

- Summarize and analyse performance metrics data to understand trends and identify issues within plant for improvements.
- Skills: data mining, data analysis

## Education

### University of Lorraine
*Nancy, France*

PHD. IN COMPUTER SCIENCE
*Oct. 2021 - Oct. 2024*

- Thesis title: Generating diverse synthetic data for ASR training data augmentation
- Thesis supervisors: Emmanuel Vincent and Vincent Colotte

### African Institute for Mathematical Sciences (AIMS)
*Ghana*

MASTERS IN MATHEMATICAL SCIENCES (MACHINE INTELLIGENCE SPECIALIZATION)
*Oct. 2019 - Oct. 2020*

- Thesis: Towards a weakly-supervised learning paradigm for speech recognition
- Thesis supervisors: Moustapha Cisse and Yossi Adi
- Relevant Coursework: Foundations of Machine Learning, Mathematics for Machine Learning, Natural Language Processing, Computer Vision, Speech Recognition, and Reinforcement Learning.
- Grade: Distinction

### University of Lagos
*Lagos, Nigeria*

MASTERS IN ELECTRICAL AND ELECTRONIC ENGINEERING
*2017 - 2019*

- Grade: Distinction

### Ladoke Akintola University of Technology
*Ogbomoso, Nigeria*

BACHELOR OF TECHNOLOGY IN ELECTRONIC AND ELECTRICAL ENGINEERING
*2007 - 2012*

- Grade: First Class Honours
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# Technical Skills

- Programming Languages and Libraries: Python, Javascript, NumPy, PyTorch, Tensorflow.
- Data Science: SQL, Databases (PostgreSQL & MySQL), Microsoft Excel & PowerBI.
- Research: Research article writing, documentation, distributed computing, AI model development.
- Spoken Languages: English (Native), French (Upper Intermediate), Spanish (Lower Intermediate).

# Publications

### Published articles

- **S. Ogun**, A. Owodunni, T. Olatunji, E. Alese, B. Oladimeji, T. Afonja, K. Olaleye, N. Etori, T. Adewumi. 1000 African Voices: Advancing inclusive multi-speaker multi-accent speech synthesis. In Proc. Interspeech 2024. 2024.
- T. Afonja, T. Olatunji, **S. Ogun**, N. Etori, A. Owodunni, M. Yekini. Performant ASR models for medical entities in accented speech. In Proc. Interspeech 2024. 2024.
- G. Coiffier, **S. Ogun**, L. Valque, P. Trivedi. Think before loading (State of the art), 2024, 978-2-9591975-0-5
- **S. Ogun**, V. Colotte, and E. Vincent. Stochastic pitch prediction improves the diversity and naturalness of speech in Glow-TTS. In Proc. Interspeech, 2023, pp. 4878–4882.
- **S. Ogun**, V. Colotte, and E. Vincent. Can we use Common Voice to train a multi-speaker TTS system? In Proc. SLT. IEEE, 2023. pp. 900-905.

### Blog articles

ARTCILES AVAILABLE AT HTTPS://OGUNLAO.GITHUB.IO/ARCHIVE/INDEX.HTML

- Making Efficient Neural Networks.
- From GRU to Transformer.
- You Don't Really Know Softmax.
- Cross Validation and Reproducibility in Neural Network Training.

# Certifications

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| 2020 | **Data Engineering with Google Cloud,** Google | |
| 2019 | **Deep Learning Specialization,** deeplearning.ai | |
| 2019 | **IBM Data Science Professional Certificate,** IBM | |
| 2014 | **Oracle Database SQL Administration,** Oracle University | |

# Honors & Awards

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| 2019 | **Recipient,** Scholarship for the African masters in machine intelligence program by Meta and Google | *Ghana* |
| 2012 | **1st Overall,** Best Graduating Student, Communications Option, at undergraduate level | *Nigeria* |
| 2009-2011 | **2x Recipient,** MTN Foundation Science and Technology Scholarship for Bachelors Degree | *Nigeria* |
| 2006 | **1st Place,** Lagos State Mathematics Olympiad | *Lagos, Nigeria* |
| 2004 | **Bronze Medal,** National Junior Science Olympiad | *Abuja, Nigeria* |

# AI Research Groups

- Masakhane NLP Research Group: NLP research on low-resource languages
- Biomedical Research in Artificial Intelligence and Machine Perception (Bio-RAMP) Group: NLP and speech research for medical applications.