John Oluwatimilehin Hicks

Music Information Retrieval · Music Technology · Machine Learning for Audio

Lagos, Nigeria · jotihicks@gmail.com · GitHub · AFMGC Dataset

RESEARCH INTERESTS

Music information retrieval and machine learning for audio, with an emphasis on self-supervised and low-resource methods for musical traditions that existing corpora underrepresent. My work centres on the computational analysis of African popular music its rhythmic, timbral and multilingual specificity and on the question of whether representations pre-trained on Western repertoire transfer to it at all. I approach this from inside music production practice as well as from research: my long-term aim is to build representation-learning systems that respect idiomatic specificity rather than flattening it, and to bring practitioner musicianship into the design of those systems.

EDUCATION

University of Lagos — Postgraduate Diploma, Computer Science *Nov 2024 – Aug 2026*

Lagos, Nigeria

- **Final thesis:** The African Music Genre Classifier (AFMGC) — an annotated corpus of African popular music and a deep-learning pipeline for genre classification, built on a custom-curated audio dataset.
- Relevant coursework: Problem Solving and Programming Languages, Software Research, Operations Research and Statistics.

University of Lagos — B.Sc. Economics *Jun 2015 – Aug 2019*

Lagos, Nigeria

- Statistics, econometrics and quantitative methods; the quantitative foundation for later machine-learning work.

PUBLICATIONS AND RESEARCH OUTPUT

Hicks, J. O., & Yinka-Banjo, C. *The African Music Genre (AFMGC) Dataset: A Culturally Grounded Corpus for Music Information Retrieval.* Under revision for resubmission to *Transactions of the International Society for Music Information Retrieval* (TISMIR). Invited resubmission following editorial review; the journal's standard six-month waiting period waived by the Editors-in-Chief.

AFMGC Dataset — 1,061 human-annotated 30-second clips spanning ten West, Southern and Central African genres, annotated for genre, language and instrumentation. Released as a derived-feature corpus: 91 handcrafted acoustic descriptors per clip plus aligned Mel-spectrogram representations, with a reproducible extraction pipeline.

RESEARCH EXPERIENCE

Research Assistant — Artificial Intelligence and Robotics Laboratory (AIRLAB) *Aug 2025 – Present*

University of Lagos · Supervisor: Prof. Chika Yinka-Banjo

- Lead researcher on the AFMGC dataset and classification work, from corpus design and annotation protocol through feature extraction, baseline modelling and manuscript preparation.

Research Assistant — Nigerian AI Research Lab *Aug 2025 – Present*

Department of Computer Science, University of Lagos

- Educational-technology and personalised-learning research within the lab's programme on AI for African contexts, focused on secondary and tertiary education.

Affiliated Researcher — AI Unipod (UNDP Nigeria) *Aug 2025 – Present*

- Contributor to UNDP's AI for Development initiative in Nigeria, working on locally grounded, low-resource AI applications spanning audio, music and computer vision.
- Presented the lab's AI security surveillance project to the Federal Minister of Science and Technology and the Ambassador of Denmark.

SELECTED RESEARCH PROJECT

African Music Genre Classifier (AFMGC) *2025 – 2026*

Postgraduate Diploma thesis · basis of the TISMIR submission above

- Designed and curated a corpus of 1,061 clips across ten African genres — Afrobeat, Afrobeats, Amapiano, Highlife, Makossa, Kwaito, Soukous, Jùjú, Fújì and Congolese Rumba — balanced by class and standardised to mono, 22,050 Hz, uncompressed.
- Built the annotation protocol in Label Studio, capturing genre, lyrical language and instrumentation by listener judgement rather than inherited metadata.
- Implemented the end-to-end feature pipeline in Python (Librosa, NumPy): silence trimming, loudness normalisation, STFT framing, and extraction of MFCC, spectral and chroma descriptors into a 91-dimensional representation, with aligned Mel-spectrograms for deep pipelines.
- Characterised the feature space using correlation analysis, PCA and t-SNE to establish where genres separate and where historically related genres overlap, and trained classical and convolutional baselines to give future users a reference point.
- Current work extends the corpus toward self-supervised pre-training and low-resource transfer learning, and evaluates whether music representations pre-trained on Western repertoire transfer to African genres.

TEACHING

Teaching Assistant — Data Science and Machine Learning *Aug 2025 – Present*

AIRLAB, University of Lagos

- Teach supervised and unsupervised learning fundamentals, Python tooling (NumPy, pandas, scikit-learn) and applied projects to undergraduate and graduate trainees.

MUSIC PRACTICE AND PRODUCTION

I am a self-producing recording artist and audio engineer working in the Lagos production ecosystem, with end-to-end experience in composition, recording, mixing and mastering. This is methodologically relevant rather than incidental: many design decisions in MIR pipelines frame sizes, perceptual loudness, spectral feature design, timbre representation are better informed by having spent years shaping these signals directly. It also gives me working access to the artists, producers and rights holders whose recordings any African music corpus depends on, and to annotators with genuine idiomatic expertise in these genres.

Independent Recording Artist and Producer *2017 – Present*

- First commercial DSP release 2019. Approximately 301,000 lifetime plays on Audiomack and 40,200 on Apple Music.

Production Apprenticeships *2018 – 2022*

- Trained as songwriter and record producer under **Semzi Beats** (2018–2021), **P.Priime** (2020–2021) and **Sarz** (2022) — among the most prominent producers in contemporary Afrobeats, with credits across the genre's leading international artists.
- Managed end-to-end production at Sambol Studio, Lagos (2021–2022): composition, recording, multi-track mixing, mastering and release.

TECHNICAL SKILLS

Audio and MIR: Librosa; STFT and spectral analysis; MFCC, chroma and spectral feature extraction; Mel-spectrogram representations; dataset curation, annotation design and preprocessing pipelines.

Machine learning: Python (NumPy, pandas, scikit-learn, PyTorch); classical classifiers and convolutional architectures for audio; dimensionality reduction and feature-space analysis (PCA, t-SNE); evaluation design and error analysis.

Programming: Python (primary), C/C++, SQL.

Audio engineering: REAPER (primary), FL Studio (expert), Ableton Live; multi-track mixing and mastering, sound design, vocal processing, spatial imaging; FabFilter, Waves, iZotope (Ozone, RX), Antares and Valhalla toolchains.

Instruments: Guitar (primary), piano.

Languages: English (fluent), Yorùbá.