

Wanchi Lucia Yen

Pittsburgh, PA — wluciaye@andrew.cmu.edu — [LinkedIn](#) — [GitHub](#) —
[Portfolio](#) — [Google Scholar](#)

Research Interests: Multimodal Learning • Speech & Language Technologies • Computer Vision • Low-Resource AI

OBJECTIVE

AI researcher and engineer focused on multimodal learning, speech and language technologies, sign language recognition, and efficient machine learning for low-resource settings. Seeking opportunities to advance robust and generalizable AI systems that positively impact underserved communities.

EDUCATION

Carnegie Mellon University

M.S. Engineering Artificial Intelligence

08/2025 – Present

Rwanda/Pittsburgh, PA

- GPA: **3.88/4.00**; Mastercard Foundation Scholar.
- Fall 2026 academic exchange at Carnegie Mellon University's Pittsburgh campus.

University of Buea

B.Tech. Computer Engineering

2022 – 2025

Buea, Cameroon

- GPA: **3.58/4.00**.
- Kate Kante Excellence Award Scholarship.

HONORS & SELECTED AWARDS

- **1st Place Overall** 2026
AI4EAC Skills2Job Challenge (UNESCO) Built an AI system to retrieve and rank five occupations from five input skills
- **Top First-Timer** 2026
WiDS Global Datathon 2026 Built a survival model to predict wildfire threats to evacuation zones
- **3rd Place** 2026
Yango Yaoundé Mobility Prediction Hackathon Built a machine learning model to predict taxi ride times from trip and weather data
- **1st Place** 2025
Tartan Innovate Hackathon, Carnegie Mellon University Africa Built ECHO for English–Kinyarwanda and English–Swahili text and speech translation
- **2nd Place Nationwide** 2023
SIMCON Innovation Challenge (UNDP, Cameroon) Built a smart home automation system that communicated in both Pidgin and English
- **1st Place – Most Innovative Project** 2024
Innovation Hackathon, Orange Digital Center – University of Buea Built Authentic Cultures, an app documenting the cultural heritage and languages of 10 villages across Cameroon's 10 regions

PUBLICATIONS & MANUSCRIPTS

[W.1] W. L. Yen et al., “CASL-TransNet: Multimodal Central African Sign Language Recognition.” *Accepted at Deep Learning Indaba 2026*. [arXiv:2608.06407](#).

[S.1] V. T. Olufemi, O. Babatunde, R. Njema, B. Gbotemi, W. L. Yen, et al., “Beyond Zero-Shot: Benchmarking Fine-Tuned Edge ASR Across 19 African Languages.” *Under review, EMNLP 2026*. [arXiv:2606.02375](#).

PROFESSIONAL EXPERIENCE

- **Carnegie Mellon University Africa – Prof Moise Busogi** 10/2025 – 9/2026
Graduate Research Assistant Kigali, Rwanda
 - Developed TransSLR, a lightweight pose-based temporal transformer for signer-independent Central African Sign Language recognition, achieving **80.39% accuracy** and improving the previous CASL-W60 benchmark by **10.46 percentage points**.
 - Developed KCN-Sign Encoder, extending TransSLR into a shared representation model across Kenyan, Central African, and Nigerian Sign Languages using pose sequences, RGB video, and static sign images.
 - Achieved **80.26% Macro-F1** with shared pose representations across the three sign Languages.

- Contribute to WAKANDA AI, developing end-to-end speech translation systems for low-resource Bantu languages and investigating robust multilingual speech representations.
- **able Group (formerly CredAble)** 06/2026 – 09/2026
Data Science Intern Dubai, UAE / Remote
 - Built income-estimation pipelines in PySpark and Databricks using mobile-money transaction behaviour, engineering **77 behavioural features** and achieving up to **0.967 R^2** for visible-income prediction, demonstrating the viability of transaction-derived income proxies for affordability and lending decisions.
 - Developed a cross-platform data-linkage pipeline for KashNow, Kwasa, and Airtel Money, using identity validation and SHA-256 mobile matching to connect **5.87M customers** to transaction behaviour and identify the data-linkage and temporal-alignment requirements for supervised income modelling.
 - Built a KMeans behavioural segmentation model (**0.552 silhouette score**) and scored **7.35M+ customers** into activity-based proxy tiers, providing an interim customer-segmentation approach while validated income labels and cross-platform identifiers were being resolved.
- **ECHO (LetUsEcho)** 2025 – Present
AI Researcher Kigali, Rwanda
 - Develop low-resource speech synthesis systems for African languages, using large multimodal models to generate and curate synthetic training data; built a **51-hour Kinyarwanda speech corpus** from **28,263 unique phrases** at approximately **\$1.23/hour**.
 - Fine-tuned and evaluated MMS and OuteTTS architectures for Kinyarwanda TTS, achieving **19.2% WER** with OuteTTS-1B on human-recorded speech, approaching the **16.0% human reference** while identifying model capacity as critical for learning from noisy synthetic data.
 - Research model compression and inference optimization for deploying multilingual speech models on resource-constrained devices, focusing on reducing latency and compute requirements while preserving speech intelligibility.
- **SignLabs Cameroon** 05/2026 – 06/2026
Video Data Annotator – Cameroon Sign Language Cameroon
 - Annotated and validated word-level Cameroon Sign Language video data for machine learning research.
 - Performed video segmentation, label validation, ambiguity resolution, and quality assurance to improve dataset consistency.

TEACHING & MENTORING

- Carnegie Mellon University** 08/2026 – Present
Graduate Teaching Assistant – Data, Inference, and Applied Machine Learning Pittsburgh, PA
- Support graduate instruction in applied machine learning, statistical inference, and data-driven modeling.
 - Lead recitations and office hours and provide technical guidance on machine learning concepts, mathematical reasoning, and implementation.
 - Grade assignments and assessments and provide technical feedback to strengthen students' understanding of statistical and machine learning methods.

SKILLS

Programming & Data:	Python, SQL, PySpark, Pandas, NumPy
Frameworks & Tools:	PyTorch, Hugging Face Transformers, Scikit-learn, Databricks, Git, Weights & Biases
Speech & Multimodal AI:	ASR, Speech Translation, Text-to-Speech, Audio Language Models, Sign Language Recognition, Computer Vision, Pose Estimation
ML Systems & Edge AI:	Distributed Training, Quantization, Edge Deployment, Model Optimization