

TIFFANY DEGBOTSE

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SUMMARY

Machine Learning Engineer experienced in LLMs, conversational AI, and deep learning, with strong Python skills and a track record building real-time transcription, diarization, and evaluation pipelines for applied AI systems.

EDUCATION

Duke University, Pratt School of Engineering
MEng, Artificial Intelligence
Ashesi University, School of Computer Science
BSc, Computer Science | 3.76

Durham, North Carolina
August 2025– August 2026
Accra, Ghana
January 2022 – June 2025

RELEVANT EXPERIENCE

Duke Trust Lab, Duke University-Research Assistant | Durham, NC August 2025-Present

- Architected a real-time transcription and speaker-diarization pipeline, reducing response latency by 10s vs baseline and supporting scalable deployment for live collaboration tools.
- Design context-aware workflows by integrating live transcripts with RAG and ontology-aligned embeddings, improving knowledge recall and reducing misattribution errors.

Brinson Lab, Duke University -Research Associate | Durham, NC July 2025 – Present

- Build and refine test harnesses and evaluation pipelines for LLMs extracting material compositions from scientific papers, raising F1 scores by 10% and guiding Eaton's industrial polymer-composite applications.
- Design and test threshold-based validation methods that determine when predicted samples are sufficiently accurate to be considered valid, providing new insights into how composition confidence levels affect downstream property predictions and advancing the dependability of AI-driven scientific knowledge extraction.

Fidelity Bank -Mobile Development Intern| Accra, Ghana August 2024 – September 2024

- Developed Orange Scribe, an AI transcription tool with Django and Assembly AI, to automate meeting documentation and improve team productivity.

PROJECTS

Video-to-Video Style Transfer Capstone (Best Individual Thesis Award) October 2024-March 2025

- Completed a 7-month capstone developing a real-time video style transfer system in Python with CNN-based neural style transfer, then extended the work with transformer architectures, benchmarking both approaches to improve speed, visual fidelity, and applicability in video generation workflows.

Twí Speech-to-Text Transcription November 2024-December 2024

- Fine-tuned Wav2Vec2.0 on a curated dataset of 2,500+ Twí audio recordings, developing transcription capability for an under-resourced Ghanaian language.
- Improved transcription accuracy by reducing word error rate from 41% (baseline) to 18% on evaluation sets.

LEADERSHIP EXPERIENCE

Duke University |Durham, North Carolina September 2025-Present

Student Event Management Officer-AI Competitions Club

- Manage event logistics, partnerships, and outreach for AI hackathons, engaging 40+ students and stakeholders.
- Coordinate team deliverables and mentor participants, strengthening leadership and project management skills.

SKILLS

Programming & ML: Python, PyTorch, TensorFlow, Scikit-Learn, Pandas, NumPy, SQL

Conversational AI & VoiceAI: Prompt engineering, RAG, Whisper, AssemblyAI, diarization, speech-to-text

Workflow & Tools: GitHub (CI/CD), API integration, data validation, test harnesses

Communication: Data storytelling, stakeholder presentation, collaboration in interdisciplinary teams