TASSALLAH AMINA ABDULLAHI

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RESEARCH PROFILE

Researcher specializing in evaluation and safety of large language models across speech and text modalities, with applications to healthcare and multilingual AI systems. My work focuses on building benchmarks, adversarial evaluation frameworks, and retrieval-grounded systems for trustworthy AI in high-stakes environments.

RESEARCH INTERESTS

LLM Evaluation and Benchmarking, Trustworthy and Responsible AI, Safety and Alignment of Large Language Models, Multilingual and Low-Resource NLP, Retrieval-Augmented Systems, Generative AI for Healthcare

EDUCATION

Brown University — Providence, RI
Ph.D. Candidate in Computer Science — Sept 2021 – Present
Thesis: *Towards Trustworthy AI for Clinical Decision Making*
Advisors: Carsten Eickhoff and Ritambhara Singh
Sc.M. in Computer Science (GPA: 4.00/4.00) — May 2023

University of Cape Town — Cape Town, South Africa
M.Sc. in Computer Science (Distinction) — May 2021
B.Sc. (Honors) Information Technology — May 2019

Bayero University Kano — Kano, Nigeria
B.Sc. (Honors) Computer Science — May 2014

SELECTED PUBLICATIONS

LLM Evaluation, Safety, and Multilingual Benchmarking

- **The Persona Paradox: Medical Personas as Behavioral Priors in Clinical Language Models.** ACL ARR 2026.

- **UbuntuGuard: A Culturally-Grounded Policy Benchmark for Equitable AI Safety in African Languages.** AAAI LM4UC 2026.

- **AfriVox: Probing Multilingual and Accent Robustness of Speech LLMs.** EACL 2026.

- **Benchmarking is Broken—Don't Let AI Be Its Own Judge.** NeurIPS 2025 (Position Paper).

Generative AI for Healthcare and Clinical Reasoning

- **Identifying and Timing Patient Outcomes in Clinician Notes Using LLMs (AI in Medicine, 2026)**

- **AfriMed-QA: A Pan-African Multi-Specialty Medical QA Dataset.** ACL 2025. Best Social Impact Paper Award.

- **Afrispeech-Dialog: A Benchmark for Spontaneous Healthcare Conversations in African English.** NAACL 2025.

- **Diagnostic Accuracy of ChatGPT-4 for TIA and Stroke.** International Stroke Conference 2025.

- **Learning to Make Rare and Complex Diagnoses with Generative AI Assistance.** JMIR Medical Education 2024.

- **A Multi-Country Study Comparing Typed vs ASR-Based Medical Documentation.** Under review, BMJ Digital Health & AI.

Knowledge-Grounded AI and Retrieval Systems

- **LLM-Powered Graph Reasoning for Knowledge Discovery.** WiML @ NeurIPS 2025.

- **K-Paths: Reasoning Over Graph Paths for Drug Repurposing and Drug Interaction Prediction.** KDD 2025.

- **Retrieval-Augmented Zero-Shot Text Classification.** ACM SIGIR ICTIR 2024.

- **Retrieval-Based Diagnostic Decision Support: A Mixed-Methods Study.** JMIR Medical Informatics 2024.

RESEARCH AND INDUSTRY EXPERIENCE

Optum AI, UnitedHealth Group   Remote, USA
Graduate Research Intern – AI/ML in Healthcare   Jun 2025 – Oct 2025

- Designed retrieval-augmented generation pipelines for clinical decision support.

- Built abbreviation-aware clinical retrieval systems using knowledge graphs and embedding models.

- Generated synthetic clinical data to augment training and evaluation datasets.

- Fine-tuned embedding models using contrastive learning to improve retrieval performance.

- Developed adversarial evaluation strategies to stress-test hallucination risk and prompt injection vulnerabilities in healthcare LLMs.

- Implemented evaluation frameworks for RAG systems combining automated metrics and clinician review.

Research Assistant, University of Cape Town   Jun – Aug 2020

- Modeled climate-driven disease risk and contributed to peer-reviewed research on healthcare forecasting.

Azure Administrator Intern, EUC Africa   Oct 2020 – Apr 2021

- Managed cloud infrastructure including virtual networks, automation pipelines, and monitoring systems on Microsoft Azure.

INVITED TALKS AND WORKSHOPS

- Brown University Love Data Week 2025: *LLMs for Diagnostic Decision Support*

- Brown COBRE 2025: *Innovations in AI: Applications to Research and Healthcare*

- Emory Health AI Bias Datathon 2024: *Breast Cancer Disparities and Evidence-Based Imaging*

- Clinical Machine Learning Workshop 2024: *Can LLMs Perform Complex Diagnostics?*

AWARDS AND LEADERSHIP

Awards

- ACM SIGHPC Computational and Data Science Fellowship (2022–2025)

- Brown University Diversity Fellowship (2021–2024)

- National Research Foundation Scholarship, South Africa

- Mandela Institute for Development Studies Scholarship

Leadership

- Led multilingual healthcare dataset collaborations across African institutions.

- Mentored undergraduate research assistants and Erasmus exchange students.

- Data Science Mentor, HASTE Health AI Datathon at Brown University.

SKILLS

Programming	Python, Java, R, SQL
ML Frameworks	PyTorch, TensorFlow, Keras, Scikit-learn, Pandas
Cloud Platforms	Microsoft Azure, Google Cloud Platform
Languages	English, Hausa, Yoruba, Pidgin English