TASSALLAH AMINA ABDULLAHI

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RESEARCH INTERESTS

Trustworthy & Responsible AI, Safety and Alignment of LLMs, Low-Resource & Multilingual NLP, Evaluation & Benchmarking, Retrieval-Augmented Systems, Knowledge Graphs, Generative AI for Healthcare & Scientific Discovery

EDUCATION

Brown University — Providence, RI
Thesis: Towards Trustworthy AI for Clinical Decision Making
Ph.D. Candidate in Computer Science — Sept 2021 - Present (5th Year)
Sc.M. in Computer Science (GPA: 4.00/4.00) — May 2023
Advised by: Carsten Eickhoff (University of Tübingen) and Ritambhara Singh

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

Bayero University Kano — Kano, Nigeria
B.Sc.(Honors) in Computer Science (GPA: 4.34/5.00) — May 2014

SELECTED PUBLICATIONS & PROJECTS

Trustworthy AI Evaluation, Safety Alignment 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.* [Developing and evaluating LLM safety guardrails across low-resource languages, focusing on rule adherence, robustness, and multilingual alignment.]
- **AfriVox: Probing Multilingual and Accent Robustness of Multimodal Models.** (EACL, 2026).
- **Position Paper: Benchmarking is Broken—Don't Let AI Be Its Own Judge.** (NeurIPS, 2025). [Responsible AI evaluation]
- **AfriMed-QA: A Pan-African, Multi-Specialty Medical QA Dataset.** ACL, 2025. Best Social Impact Paper Award. [Multilingual dataset creation for low-resource healthcare QA]
- **Afrispeech-Dialog: A Benchmark for Spontaneous Healthcare Conversations in African English.** NAACL, 2025. [Speech dataset for clinical settings in African English]

Knowledge Graphs, RAG, and Scientific Discovery

- **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.

Evaluation of Generative AI for Clinical Reasoning, Safety and Robustness

- **Diagnostic Accuracy of ChatGPT-4.0 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 and AI, 2025)

Advancing Healthcare with Time Series Forecasting

- **Identifying and Timing Patient Outcomes in Clinician Notes Using Large Language Models.** *Under review* AI in Medicine, 2025.

- **Predicting Disease Outbreaks with Climate Change.** PLOS ONE, 2021.

WORK EXPERIENCE

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

- Conducted research on retrieval-augmented generation for real-time healthcare applications.

- Designed abbreviation-aware pipelines and knowledge graphs in clinical domains.

- Fine-tuned embedding models with contrastive learning to improve retrieval quality for downstream tasks.

- Applied reflective prompt engineering techniques to reduce hallucinations and improve model precision.

- Developed adversarial evaluation strategies and prompt circumvention tests to assess robustness and safety of healthcare LLMs.

- Collaborated with cross-functional teams to design and evaluate model performance frameworks.

Technical Internships and Research Assistantships

- **Azure Administrator Intern, EUC Africa**   Oct 2020 - Apr 2021
  Managed virtual networks, resource monitoring, and automation on Microsoft Azure.

- **Research Assistant, University of Cape Town**   Jun - Aug 2020
  Modeled the impact of climate change on healthcare outcomes, contributing to peer-reviewed publications.

INVITED TALKS & 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?

ACADEMIC LEADERSHIP & AWARDS

Leadership & Mentorship

- Led collaborations across African institutions to build multilingual healthcare datasets, engaging linguists, clinicians, and community stakeholders.

- Mentored undergraduate research assistants and Erasmus exchange students (2023–2024).

- Data Science Mentor at HASTE Health AI Datathon, Brown University (2024).

Awards

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

- Brown University Diversity Fellowship (2021–2024)

- National Research Foundation Scholarship, South Africa (2020)

- Mandela Institute for Development Studies Scholarship (2019–2020)

SKILLS

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