

TASSALLAH AMINA ABDULLAHI

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RESEARCH INTERESTS

Foundation Models and Generative AI, Information Retrieval and LLM Reasoning, Data-Driven AI, LLMs in Healthcare

EDUCATION

Brown University

Ph.D. Candidate in Computer Science

Sc.M. in Computer Science (GPA: 4.00/4.00)

Advised by: Carsten Eickhoff (University of Tübingen) and Ritambhara Singh

Relevant Coursework: Data Science, Deep Learning, Computer Vision, AI in Healthcare, Learning with Limited Labeled Data

Providence, RI

Sept 2021 - Present

May 2023

University of Cape Town

M.Sc. in Computer Science (Awarded Distinction)

B.Sc.(Honors) in Information Technology

Relevant Coursework: Intelligent Systems, Distributed Computing, Data Visualization, Evolutionary Computation

Cape Town, South Africa

May 2021

May 2019

Bayero University Kano

B.Sc.(Honors) in Computer Science (GPA: 4.34/5.00)

Kano, Nigeria

May 2014

SELECTED PUBLICATIONS

Retrieval-Augmented Systems and Knowledge Integration

- **Tassallah Abdullahi**, Ritambhara Singh, Carsten Eickhoff. *Retrieval Augmented Zero-Shot Text Classification*. ACM SIGIR International Conference on Theory of Information Retrieval 2024.
- **Tassallah Abdullahi**, Laura Mercurio, Ritambhara Singh. *Retrieval-Based Diagnostic Decision Support: A Mixed Methods Study*. JMIR Medical Informatics, 2024.

Generative AI and LLMs in Medicine

- **Tassallah Abdullahi**, Ritambhara Singh, Carsten Eickhoff. *Learning to Make Rare and Complex Diagnoses with Generative AI Assistance*. JMIR Medical Education, 2024.
- **Tassallah Abdullahi**, Carsten Eickhoff, Ritambhara Singh. *Adapting Large Language Models for Drug-Drug Interaction Tasks via Knowledge Graphs*. ACL ARR, 2024 (Under Review).
- Ishaani Khatri, **Tassallah Abdullahi**, et al. *Diagnostic Accuracy of ChatGPT4.0 for TIA or Stroke Using Patient Symptoms and Demographic Data*. DEX24 Conference, 2024.

Healthcare Datasets and Predictive Models

- Tobi Olatunji, **Tassallah Abdullahi**, et al. *AfriMed-QA: A Pan-African, Multi-Specialty, Medical Question-Answering Benchmark Dataset*. ACL ARR, 2024 (Under Review).
- Mardhiyyah Sanni, **Tassallah Abdullahi**, et al. *Afrispeech-Dialog: A Benchmark Dataset for Spontaneous English Conversations in Healthcare and Beyond*. NAACL, 2024 (Under Review).
- **Tassallah Abdullahi**, Adeel Abbasi, Carsten Eickhoff. *Establishing the Timing of Patient Outcomes for Time-Series Modeling in Predictive Medicine*. JAMIA, 2024 (Under Review).

AI and Climate Health Predictions

- **Tassallah Abdullahi**, Neville Sweijd, Geoff Nitschke. *Predicting Disease Outbreaks with Climate Change*. PLOS ONE, 2021.

WORK EXPERIENCE

EUC Africa Pty. <i>Microsoft Azure Administrator (Intern)</i>	Cape Town, South Africa Oct 2020 - Apr 2021
<ul style="list-style-type: none">Managed Azure resources, implemented virtual networks, and automated tasks using PowerShell.Enhanced operational efficiency through robust monitoring and troubleshooting with Azure Monitor.Ensured secure resource access by implementing identity management using Azure Active Directory.	
University of Cape Town <i>Research Assistant</i>	Cape Town, South Africa Jun - Aug 2020
<ul style="list-style-type: none">Worked on a National Research Foundation project to model climate change impacts on healthcare.Assisted in the development and assessment of first-year algorithms coursework.	

INVITED TALKS & WORKSHOPS

Emory Health AI Bias Datathon Medical imaging, breast cancer disparities, and evidence-based medicine. <i>HITI Lab, Emory University.</i>	Aug 2024
Clinical Machine Learning Workshop Can Generative Large Language Models Perform Complex Diagnostics? <i>The Warren Alpert Medical School, Brown University.</i>	Feb 2024
Research Matters: Brown University The Burden of Limited Labeled Data for Diagnostics.	Apr 2023

MENTORSHIP

Data Science Mentor Mentored participants at the Health AI Systems Thinking for Equity (HASTE) Datathon.	Brown University Datathon, Jun 2024
Undergraduate Mentorship <ul style="list-style-type: none">Mikayla Walsh - Brown University, Providence, RIIlana Nguyen - Brown University, Providence, RI	Feb 2024 - Present Oct 2023 - Feb 2024
Erasmus Study Abroad Program Ali Bacaksiz - University of Tübingen, Germany, under Carsten Eickhoff.	Jun - Oct 2023

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 Languages	Python, MySQL, R, Java
Frameworks/Tools	PyTorch, TensorFlow, Keras, Scikit-learn, Pandas, Numpy, Git
Cloud Platforms	Microsoft Azure, Google Cloud Platform (GCP)
Languages	English, Hausa, Yoruba
Specialized Areas	LLM fine-tuning, Prompt Optimization, Retrieval-Augmented Generation, Knowledge Management

REFERENCES

Ritambhara Singh - Brown University, Providence, RI	ritambhara@brown.edu
Carsten Eickhoff - University of Tübingen, Germany	carsten.eickhoff@uni-tuebingen.de
Hamish Fraiser - Brown University, Providence, RI	hamish_fraiser@brown.edu