

TASSALLAH AMINA ABDULLAHI

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RESEARCH INTERESTS

Generative AI, Information Retrieval, Knowledge Graphs, LLM Reasoning, Data-Driven Drug Discovery, 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 PROJECTS & PUBLICATIONS

Retrieval-Augmented Systems and Knowledge Integration

- **Tassallah Abdullahi**, Ioanna Gemou, Nihal Nayak, et al. *K-Paths: Reasoning over Graph Paths for Drug Repurposing and Drug Interaction Prediction*. KDD, 2025 (Under Review).
- **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

- Ishaani Khatri, Zahiri Anita, **Tassallah Abdullahi**, et al. *Diagnostic Accuracy of ChatGPT4.0 for TIA or Stroke Using Patient Symptoms and Demographic Data*. International Stroke Conference, 2025.
- **Tassallah Abdullahi**, Ritambhara Singh, Carsten Eickhoff. *Learning to Make Rare and Complex Diagnoses with Generative AI Assistance*. JMIR Medical Education, 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, 2025 (Under Review).
- Mardhiyyah Sanni, **Tassallah Abdullahi**, et al. *Afrispeech-Dialog: A Benchmark Dataset for Spontaneous English Conversations in Healthcare and Beyond*. NAACL, 2025.
- **Tassallah Abdullahi**, Adeel Abbasi, Carsten Eickhoff. *Establishing the Timing of Patient Outcomes for Time-Series Modeling in Predictive Medicine*. (In preparation).

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.

Microsoft Azure Administrator (Intern)

Cape Town, South Africa

Oct 2020 - Apr 2021

- 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

Research Assistant

Cape Town, South Africa

Jun - Aug 2020

- 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

Brown University's Sixth Annual Love Data Week

The Burden of Diagnostic Errors.

Feb 2025

Emory Health AI Bias Datathon

Medical imaging, breast cancer disparities, and evidence-based medicine. *HITI Lab, Emory University.*

Aug 2024

Clinical Machine Learning Workshop

Can Generative Large Language Models Perform Complex Diagnostics? *The Warren Alpert Medical School, Brown University.*

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

- Ioanna Gemou - Brown University, Providence, RI Sep 2024 - Feb 2024
- Mikayla Walsh - Brown University, Providence, RI Feb 2024 - Jun 2024
- Ilana Nguyen - Brown University, Providence, RI 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

Carsten Eickhoff - University of Tübingen, Germany

Hamish Fraiser - Brown University, Providence, RI

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