

Amina Mardiyah Rufai

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in <https://www.linkedin.com/in/aminah-mardiyah-rufa-i>

🌐 <https://www.github.com/amina-mardiyah>

📖 Google-Scholar

📍 Martigny, Switzerland

🔗 Amina's personal website

🎓 Education

Masters in Machine Intelligence,
African Institute of Mathematical Sciences
Jan 2021 – Oct 2022 | Mbour, Senegal

Coursework: Foundations of Machine Learning, Deep Learning, Computer Vision, Natural Language Processing, GNNs and Geometric Deep Learning, Reinforcement Learning, Research Paper implementation/Open Source Contribution etc.

Thesis: Statistical Machine Translation from English to Wolof

Masters of Science in Biomedical Engineering, University of Lagos
Jan 2018 – Mar 2019 | Lagos, Nigeria

- Top 5% in class
- Participated in a hackathon and Awarded with the Best Display of 21st Century Competencies and Best Female participant

Thesis: Classification of Retinal Fundus images with application to Glaucoma diagnosis.

Bachelor of Engineering in Chemical Engineering, University of Benin
Apr 2010 – Nov 2014 | Benin City, Nigeria

📁 Projects

Automatic Speech Recognition for English | Wolof | Hausa | Nigerian Pidgin
2021 – 2022

FAQ bot with DialogFlow | 2022

EN-AR NMT In Scientific Domain, NLP Course Project | AMMI 2021 (Won second Best position)

Hyperparameters Optimization with Deep Reinforcement Learning, Reinforcement Learning Course Project | AMMI 2021

📖 Research Interests

My research interests lie at the intersection of my two degrees in **Machine Intelligence** and **Biomedical Engineering**, with a focus on leveraging AI applications in **healthcare** and/or low-resource use-cases. Topics of interests include but not limited to **LLMs**, **speech** and **language** processing for disease diagnosis, **medical image analysis**

🧠 Skills

Programming/Scripting Language:

Python, Shell

Packages/Libraries/ToolKits:

Pandas, Numpy, Matplotlib, Seaborn, Plotly, Pytorch, Scikitlearn, Git, HuggingFace Transformers etc

Machine learning, Deep Learning Methods and Architectures:

Supervised & Unsupervised Modelling, EDA, Deep Learning, NLP, Automatic Speech Recognition(ASR), Xgboost, Transformer models, Computer Vision, SAM Model, Wav2vec2, Whisper, Pattern Recognition etc

Soft Skills:

Excellent Verbal and Written Communication Skills in English, Great Research Skills, Team player, Attention to details, Analytical Skills, Self-Motivated to Learn

📁 Professional Experience

Research Intern, Idiap Research Institute
Mar 2023 – present | Martigny, Switzerland

Tasks:

- Analysed text and speech dataset on storytelling to derive insights on storytelling abilities of interviewees and predict job performance.
- Developed a model by finetuning a language model able to classify storytelling versus non-storytelling features in a behavioural interview.

Core Technologies used: Huggingface toolkit, Git, XLMLRoberta, Pytorch, Whisper, Linux CLI, Longformer etc

Research Summer Intern, École polytechnique fédérale de Lausanne(EPFL) | MLO-iGH Lab
Jun 2022 – Aug 2022 | Lausanne, Switzerland

Tasks:

- Analysed a large time series data set from Twitter to derive insights from social media and predict the public's response to the pandemic health measures during COVID-19.
- Developed using state-of-the-art methodologies, a Multilingual Covid Sentiment Analyzer to uncover insights in socio-epidemiological behaviours during COVID-19.

Publications

AfriWOZ: Corpus for Exploiting Cross-Lingual Transferability for Generation of Dialogues in Low-Resource, African Languages, Arxiv | African NLP Workshop at ICLR 2022 | Published as a conference paper at IJCNN 2023

[clickable hyperlink](#) 

AI-Powered Understanding of Family Planning Using Fogg Behavioural Model, Published as a conference paper at ICLR 2022 Apr 2021

[clickable hyperlink](#) 

NigerianPidgin++: Towards an End-to-End Automatic Speech Recognition System for Nigerian Pidgin, Poster Presentation at Black in AI workshop | NeurIPS 2022 Nov 2022

[clickable hyperlink](#) 

Let's Talk about Machine Translation: The powering engine behind "Google Translate", Medium Article

Apr 2022

[clickable hyperlink](#) 

Generative vs. Discriminative Models in Machine Learning,

Better Programming: Medium

Jul 2020

[clickable hyperlink](#) 

Interests

Others

Reading health articles and research papers, Writing blogposts on learnings and knowledge, Exercising, Learning new Languages, Travelling, Exploring Nature

Languages

English : (Fluent) | **French** : (Basic)

Referees

Phil Garner, *Senior Research Scientist*, Idiap Research Institute
pgarner@idiap.ch

Martin Jaggi, *Professor*, EPFL
jaggi.martin@epfl.ch

Olubayo Adekanmbi,
Lead Covener, Data Scientists Network(DSN)
olubayo@datasciencenigeria.ai

Core Technologies used: AWS-CLI, huggingface toolkit, Git, Plotly, BERT, RoBERTa, mbert, Text2Blob, VaderAnalyzer, Pytorch

Solutions Analyst, Data Scientists Network(Formerly Data Science Nigeria)
Nov 2021 – Jun 2022 | Lagos, Nigeria

- Designed, analysed, and engineered workflows for real-world problems using a combination of Deep Learning, Natural Language Processing, Automatic Speech Recognition, and Ontological Knowledge Graphs.
- Designed and developed a health-focused FAQ-Bot using DialogFlow and data insights from Audio data.
- Published and presented research paper accepted in ICLR 2022

Core Technologies used: Nvidia Nemo, Google DialogFlow, wav2vec, Audacity, Spacy, Librosa, PyAudio, Pytorch

Technical Delivery Intern, Data Scientists Network(Formerly Data Science Nigeria)
Oct 2020 – Oct 2021 | Lagos, Nigeria

Hackathons and Awards

Top 5 Teams Google Africa Automatic Speech Recognition Challenge, Zindi Africa
May 2022

2nd Position AIMS Microsoft Challenge, Zindi, Africa
Apr 2021

Top 3 teams at Umoja Hack Africa, Zindi Africa
Feb 2021

Team Arete: Winner - DataHack by Access Bank 2019, Access Bank Nigeria
Nov 2019

Awarded with the Best Display of 21st Century Competencies at 3D Africa - HackForGood 2018, Youth For Technology Foundation
Aug 2018

Volunteer Experience

ACL, Program Committee
2023

Black in AI, Volunteer and BlackAIR, Workshop Reviewer | 2021, 2022

Data Scientists Network(DSN),
Lead Co-ordinator of Ladies in AI community
2020 – 2022

African NLP Research Group(Masakhane),
Research Projects Collaborations: AfriWoz