Amina Mardiyyah Rufai

✉ amina.rufai@idiap.ch

in https://www.linkedin.com/in/aminah-mardiyyah-rufa-i

⬡ https://www.github.com/Aminah92

◉ https://mardiyyah.medium.com

🎓 Google-Scholar

📍 Martigny, Switzerland

Skills

Progamming Language:
Python

Packages/Libraries/ToolKits:
Pandas, Numpy, Matplotlib, Seaborn, Plotly, Pytorch, Scikitlearn, Git, HuggingFace Transformers , CLI, Linux 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

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

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
Link: *https://arxiv.org/abs/2204.08083* 🔗

Research Interests

Computer Vision, Pattern Recognition,Natural Language processing, Automatic Speech recognition, Machine Translation, Machine Learning Applications to Healthcare and Low-resource/resource-constrained environments, LLMs

Education

Masters in Machine Intelligence,
African Institute of Mathematical Sciences
Jan 2021 | 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

- Emerged top 5 in the 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

Professional Experience

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

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

- 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.

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

NigerianPidgin++: Towards an End-to-End Automatic Speech Recognition System for Nigerian Pidgin, Poster Presentation at Black in AI workshop | NeurIPS 2022
Nov 2022
Link:*https://nbviewer.org/github/blackinai/blackinai.github.io/blob/4a3923311e72ea0613a1fcfd7472d98782787ff9/bai/src/files/BlackinAI22AcceptedPapers.pdf* 🔗

AI-Powered Understanding of Family Planning Using Fogg Behavourial Model,
Published as a conference paper at ICLR 2022
Apr 2021
Link:
https://pml4dc.github.io/iclr2022/pdf/PML4DC_ICLR2022_7.pdf 🔗

Let's Talk about Machine Translation: The powering engine behind "Google Translate"
Apr 2022
Link: *https://becominghuman.ai/lets-talk-about-machine-translation-the-powering-engine-behind-google-translate-2cbd22f1c3a* 🔗

Generative vs. Discriminative Models in Machine Learning, Better Programming: Medium
Jul 2020
Link: *https://medium.com/better-programming/generative-vs-discriminative-models-d26def8fd64a* 🔗

🎲 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)

🕸 References

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

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

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(2021)

ACL, Program Committee
2023