

# Amina Mardiyah Rufai

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

🐙 <https://www.github.com/Aminah92>

📖 <https://mardiyah.medium.com>

🏠 Google-Scholar

📍 Martigny, Switzerland

## 🧠 Skills

### Programming 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 – 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

- 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

**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

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


**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/blackina.i.github.io/blob/4a3923311e72ea0613a1fcd7472d98782787ff9/bai/src/files/BlackinAI22AcceptedPapers.pdf> 


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

**Link:** [https://pml4dc.github.io/iclr2022/pdf/PML4DC\\_ICLR2022\\_7.pdf](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](mailto:pgarner@idiap.ch)

**Martin Jaggi**, Professor, EPFL  
[jaggi.martin@epfl.ch](mailto:jaggi.martin@epfl.ch)

**Olubayo Adekanmbi**,  
Lead Covener, Data Scientists Network(DSN)  
[olubayo@datasciencenigeria.ai](mailto:olubayo@datasciencenigeria.ai)

- 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