Israel A. Azime

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Doctoral Student | Machine Learning Engineer

EDUCATION

PhD candidate - HPC in AI   November 2024 – Present
Preparatory Phase Doctoral Studies - HPC in AI   *September 2022 – November 2024*
Saarland University   *Saarbrücken, Germany*

Advisor: Prof. Dr.-Ing. Philipp Slusallek and Prof. Dr. Dietrich Klakow

Master of Science, Mathematical Sciences – Machine Intelligence   October 2019 – March 2021
African Institute for Mathematical Sciences   *Ghana, Accra*

Worked on Exploring Data Imbalance and Modality Bias in Hateful Memes with
my supervisor Marcus Rohrbach for my final research thesis. In the project I achieved
+8% and +1% improvement on accuracy and f1 score respectively.

Bachelor of Science, Software Engineering   September 2012 – December 2017
Addis Ababa Universty   *Addis Ababa, Ethiopia*
Graduation Project: *Amharic online handwriting recognition keyboard*.

WORK EXPERIENCE

Research Assistant   **September 2022 – Present**
Universität des Saarlandes,   *Saarbrücken, Germany*

- NLP, Multimodal learning, High performance computing (HPC), AI/ML
- Cluster management, Multi GPU model training and HPC related training and support.

Applied Research Data Scientist   **March 2021 – October 2022**
iQuartic, New Wave   *Maryland, USA (Remote)*

- *Collaborated with a team of data scientists on AI solutions for automated risk adjustment, leading the transition of the data science pipeline from paid to in-house solutions.*
- Developed and contributed to various projects in **medical OCR**, **medical spell checker**, **visit recognition**, and **ICD code extraction**. This included working on pipelines for *data collection, model building, deployment and testing*.

Applied ML Developer   **June 2017 – August 2022**
SingularityNet, Icog-Labs Software Consultancy   *Addis Ababa, Ethiopia*

- **NuNet Fake News Detection** : *Implemented fake news detection and classification models with 97% accuracy link*
- **Web Page Recommendation** : *Built web page recommender system using Doc2Vec similarity and DeepCTR approach.*
- **Image Retrieval Network** : *Developed Image retrieval network on 50 GB Google open images dataset.*
- **Holistic Edge Detection** : *Integrated a holistically-nested edge detection model.*
- **People Analytic Service** : *Predicting behaviors and attributes from organizational slack communication graph.*
- **Network Analytic Service** : *Providing graphs and network processing functions as a service.*
- **Plant Disease Recognition** : *Achieved 98% accuracy on plant disease detection networks and experiment with GANs.*

Internship - Junior Programmer   **Jan 2015 – May 2017**
Icog-Labs Software Consultancy   *Addis Ababa, Ethiopia*

- (**YANETU**) - AI-based teaching assistant for children and successfully launched a crowdfunding campaign on Indiegogo to support the project's development and distribution.

SKILLS

Ml Libraries and Frameworks	Python, PyTorch, Tensorflow, SciPy, NumPy, Pandas, ApacheSpark, Docker
ML Concepts	Deep Learning, Computer Vision, Natural Language Processing, Multimodal Learning
Programming	Python, Java, C#, Web Dev(HTML, CSS, JS), C/C++ (academic experience)
Soft skills	Project Management, Teamwork, Mentoring, Public Speaking, Story Telling, Writing
Language	Amharic(Native), English(fluent speaker), German (B.1)

CERTIFICATIONS

Certification Of Recognition For Outstanding Graduation Project - ⬀
Mathematics for machine learning: linear algebra - ⬀
Software processes and agile practices - ⬀
Introduction to TensorFlow for . . . - ⬀
Introduction to game development ⬀
Deep Learning Specialization - ⬀

Principles of game design - ⬀
Html, CSS and Javascript - ⬀
R programming - ⬀
Linux Fundamentals - ⬀
Machine Learning - ⬀
Gamification - ⬀

PUBLICATIONS

ProverbEval: Exploring LLM Evaluation Challenges for Low-resource Language Understanding ⬀	*NAACL 2025*
IrokoBench: A New Benchmark for African Languages in the Age of Large Language Models ⬀	*NAACL 2025*
Evaluating the Capabilities of Large Language Models for Multi-label Emotion Understanding ⬀	*COLING 2025*
Walia-LLM: Enhancing Amharic-LLaMA by Integrating Task-Specific and Generative Datasets ⬀	*EMNLP, 2024*
EthioLLM: Multilingual Large Language Models for Ethiopian Languages with Task Evaluation ⬀	*LREC-COLING 2024*
MasakhaNEWS: News Topic Classification for African languages ⬀	*IJCNLP-AACL 2023*
Natural Language Processing in Ethiopian Languages: Current State, Challenges, and Opportunities ⬀	*RAIL, EACL 2023, 2023*
Masakhane-Afrisenti at SemEval-2023 Task 12: Sentiment Analysis using Afro-centric Language Models and Adapters for Low-resource African Languages ⬀	*SemEval-2023, Task 12, 2023*
MasakhaneNER: Named Entity Recognition for African Languages ⬀	*AfricaNLP, EACL, 2021*
An Amharic News Text Classification Dataset ⬀	*AfricaNLP, EACL, 2021*
Quality at a Glance:An Audit of Web-Crawled Multilingual Datasets ⬀	*AfricaNLP, EACL, 2021*

PROJECTS AND ACTIVITIES

Community	- AI Grid, MasakhaneNLP, EthioNLP
Language coordinator	- Lead ML data collection efforts for Lacuna Fund Projects
Mentor	- SSA Google Developers Machine Learning Bootcamp - Gebeya 2022
Personal Projects	- Amharic-NLP, Telegram Bot, Games in Unity 3D, Zindi Data science Competitions, - Disaster prediction, DNA sequence Classification - NLP projects with Masakhane and EthioNLP
Extra-Activities	- Solve-IT Instructor in nationwide innovation competition (2019). - NASA Space Apps Challenge (Addis Ababa Participant 2018) - PyTorch Facebook Scholarship Recipient- Udacity(2018) - Nokia and BIT Scholarship Challenge Recipient - Udacity(2021)