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# Israel A. Azime

## Senior Machine Learning Engineer | Programmer

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### EDUCATION

**Preparatory Phase Doctoral Studies - HPC in AI** September 2022 – Present  
*Universität des Saarlandes - Computer Graphics Lab*  
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 University*  
Addis Ababa, Ethiopia

Graduation Project: *Amharic online handwriting recognition keyboard*.

### WORK EXPERIENCE

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

- Multimodal learning, High performance computing, AI/ML
- Cooperate with the other members of German national high performance computing network to prepare HPC related training and support.

**Applied Research Data Scientist** March 2021 – October 2021  
*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, Icoq-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  
*Icoq-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

<b>ML Libraries and Frame works</b>	Python, PyTorch, Tensorflow, SciPy, NumPy, Pandas, ApacheSpark, Docker
<b>ML Concepts</b>	Deep Learning, Computer Vision, Natural Language Processing, Multimodal Learning
<b>Programming</b>	Python, Java, C#, Web Dev(HTML, CSS, JS), C/C++ (academic experience)
<b>Soft skills</b>	Project Management, Teamwork, Mentoring, Public Speaking, Story Telling, Writing
<b>Language</b>	Amharic(Native), English(fluent speaker), German (A1.1)

## CERTIFICATIONS

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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 - [↗](#)

## PUBLICATION

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**MasakhaNEWS: News Topic Classification for African languages** *AfricaNLP, ICLR, 2023*  
[arxiv.org/abs/2304.09972](https://arxiv.org/abs/2304.09972)

**Natural Language Processing in Ethiopian Languages: Current State, Challenges, and Opportunities** *RAIL, EACL 2023, 2023*  
[aclanthology.org/2023.rail-1.14](https://aclanthology.org/2023.rail-1.14)

**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*  
[aclanthology.org/2023.semeval-1.182](https://aclanthology.org/2023.semeval-1.182)

**MasakhaneNER: Named Entity Recognition for African Languages** *AfricaNLP, EACL, 2021*  
[aclanthology.org/2021.tacl-1.66](https://aclanthology.org/2021.tacl-1.66)

**An Amharic News Text Classification Dataset** *AfricaNLP, EACL, 2021*  
[arXiv:2103.05639](https://arxiv.org/abs/2103.05639)

**Quality at a Glance: An Audit of Web-Crawled Multilingual Datasets** *AfricaNLP, EACL, 2021*  
[aclanthology.org/2022.tacl-1.4](https://aclanthology.org/2022.tacl-1.4)

## PROJECTS AND ACTIVITIES

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**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)