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# Israel A. Azime

## Doctoral Student | Machine Learning Engineer

israelabebe.github.io  
GitHub: IsraelAbebe  
LinkedIn: israel-abebe

### EDUCATION

#### PhD candidate

*Universität des Saarlandes*

*Dissertation: Effective Domain Adaptation Methods in LLM*

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

September 2022 – December 2026[Expected]

*Saarbrücken, Germany*

#### Master of Science, Mathematical Sciences – Machine Intelligence

*African Institute for Mathematical Sciences*

*Thesis: Exploring Data Imbalance and Modality Bias in Hateful Memes*

*Advisor: Prof. Dr. Marcus Rohrbach*

October 2019 – March 2021

*Accra, Ghana*

#### Bachelor of Science, Software Engineering

*Addis Ababa University*

Project: *Amharic online handwriting recognition keyboard.*

Certification Of Recognition For Outstanding Graduation Project

*Advisor: Prof. Dr. Natnael Argaw Wondimu*

September 2012 – December 2017

*Addis Ababa, Ethiopia*

### WORK EXPERIENCE

#### Research Assistant | HPC cluster support

*Universität des Saarlandes,*

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

September 2022 – Present

*Saarbrücken, Germany*

#### Applied Research Data Scientist

*iQuartic, New Wave*

- 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*.

March 2021 – October 2022

*Maryland, USA (Remote)*

#### Applied ML Developer

*SingularityNet, IcoG-Labs Software Consultancy*

- **NuNet Fake News Detection:** 97% accuracy in fake news classification.
- **Web Page Recommendation:** Built recommender using Doc2Vec and DeepCTR.
- **Image Retrieval Network:** Trained on 50 GB Google Open Images for visual search.
- **Holistic Edge Detection:** Integrated holistically-nested edge detection model.
- **People Analytics:** Predicted behaviors from Slack communication graphs.
- **Network Analytics:** Provided large-scale graph analysis as a service.
- **Plant Disease Recognition:** 98% accuracy using CNNs and GAN-based augmentation.

June 2017 – August 2022

*Addis Ababa, Ethiopia*

#### Internship - Junior Programmer

*IcoG-Labs Software Consultancy*

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

Jan 2015 – May 2017

*Addis Ababa, Ethiopia*

### SKILLS

Machine Learning Frameworks

AI and Research Areas

Programming and Tools

Soft and Professional Skills

Languages

Python, PyTorch, Tensorflow, SciPy, NumPy, Pandas, ApacheSpark, Docker

Deep Learning, Computer Vision, Natural Language Processing, Multimodal Learning

Python, Java, C#, Web Dev(HTML, CSS, JS), C/C++ (academic experience)

Project Management, Teamwork, Mentoring, Public Speaking, Story Telling, Writing

Amharic(Native), English(fluent speaker), German (A2)

RESEARCH GRANTS

Google Cloud Credits to support research project titled "African Languages" USD \$9000	September 2025 - September 2026
AfriFact & AfriGuard: Dataset for Fact-Checking and Robust Refusal USD \$113,332.50	June 2025 - June 2026
PaliGemma Research Grants: in GCP Credits. USD \$5,000	Aug 2024 - Aug 2025













PROJECTS AND ACTIVITIES

- **Guest Lecture:** University of South Florida.
- **Peer Review:** ACL ARR, AfricaNLP Workshop, and EthioNLP Workshop.
- **Community:** Member of AI Grid, MasakhaneNLP, and EthioNLP.
- **Language Coordinator:** Led ML data collection for Lacuna Fund projects.
- **Mentor:** SSA Google Developers ML Bootcamp (Gebeya, 2022).
- **Projects:** Amharic NLP tools, Telegram bots, Unity 3D games, Zindi ML challenges (disaster prediction, DNA classification).
- **Instructor:** Solve-IT National Innovation Competition (2019).
- **Participant:** NASA Space Apps Challenge, Addis Ababa (2018).
- **Scholarships:** PyTorch Facebook Scholarship (Udacity, 2018); Nokia & BIT Scholarship Challenge (Udacity, 2021).

WORKSHOPS ORGANIZED

• 1st EthioNLP Workshop at ICES22	September 2025
• AfricaNLP Workshop, ACL 2025	July 2025
• AfricaNLP Workshop, ICLR 2024, May	May 2024
• NHR SW Third LLM Workshop	Dec 2025
• PyTorch for Molecular Property Prediction	Jun 2025
• Fairness & Explainability in LLMs	Oct 2024
• Introduction to In-Context Learning	Jun 2024
• Weights & Biases for Research	Nov 2023
• Introduction to Large Language Models	Sep 2023

CERTIFICATIONS

Certification Of Recognition For Outstanding Graduation Project - 	Principles of game design - 
Mathematics for machine learning: linear algebra - 	Html, CSS and Javascript - 
Software processes and agile practices - 	R programming - 
Introduction to TensorFlow for . . . - 	Linux Fundamentals - 
Introduction to game development 	Machine Learning - 
Deep Learning Specialization - 	Gamification - 

WORKSHOP PAPERS

Azime, I. A., Belay, T. D., & Tonja, A. L. (2025). Evaluation sheet for deep research: A use case for academic survey writing. *arXiv preprint arXiv:2510.01283*.

Azime, I. A., Al-azzawi, S., Tonja, A. L., Shode, I., Alabi, J., Awokoya, A., Oduwole, M., Adewumi, T., Fanijo, S., & Oyinkansola, A. (2023). Masakhane-afrisenti at SemEval-2023 task 12: Sentiment analysis using Afro-centric language models and adapters for low-resource African languages. In A. K. Ojha, A. S. Doğruöz, G. Da San Martino, H. Tayyar Madabushi, R. Kumar, & E. Sartori (Eds.), *Proceedings of the 17th international workshop on semantic evaluation (semeval-2023)* (pp. 1311–1316). Association for Computational Linguistics. <https://doi.org/10.18653/v1/2023.semeval-1.182>

Azime, I. A., & Mohammed, N. (2021). An amharic news text classification dataset. *arXiv preprint arXiv:2103.05639*.

## CONFERENCE PAPERS

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- Azime, I. A., Kanubala, D. D., Afonja, T., Fritz, M., Valera, I., Klakow, D., & Slusallek, P. (2025). Accept or deny? evaluating llm fairness and performance in loan approval across table-to-text serialization approaches. *arXiv preprint arXiv:2508.21512*.
- Azime, I. A., Tonja, A. L., Belay, T. D., Chanie, Y., Balcha, B. F., Abadi, N. H., Ademtew, H. B., Nerea, M. A., Yadeta, D. D., Geremew, D. D., Tesfu, A. A., Slusallek, P., Solorio, T., & Klakow, D. (2025). ProverbEval: Exploring LLM evaluation challenges for low-resource language understanding. In L. Chiruzzo, A. Ritter, & L. Wang (Eds.), *Findings of the association for computational linguistics: NaacL 2025* (pp. 6250–6266). Association for Computational Linguistics. <https://doi.org/10.18653/v1/2025.findings-naacl.350>
- Belay, T. D., Azime, Israel Abebe, Ayele, A. A., Sidorov, G., Klakow, D., Slusallek, P., Kolesnikova, O., & Yimam, S. M. (2025). Evaluating the capabilities of large language models for multi-label emotion understanding. In O. Rambow, L. Wanner, M. Apidianaki, H. Al-Khalifa, B. D. Eugenio, & S. Schockaert (Eds.), *Proceedings of the 31st international conference on computational linguistics* (pp. 3523–3540). Association for Computational Linguistics. <https://aclanthology.org/2025.coling-main.237/>
- Azime, I. A., Tonja, A. L., Belay, T. D., Fuge, M. Y., Wassie, A. K., Jada, E. S., Chanie, Y., Sewunetie, W. T., & Yimam, S. M. (2024). Walia-LLM: Enhancing Amharic-LLaMA by integrating task-specific and generative datasets. In Y. Al-Onaizan, M. Bansal, & Y.-N. Chen (Eds.), *Findings of the association for computational linguistics: Emnlp 2024* (pp. 432–444). Association for Computational Linguistics. <https://doi.org/10.18653/v1/2024.findings-emnlp.25>
- Romero, D., Lyu, C., Wibowo, H. A., Lynn, T., Hamed, I., Kishore, A. N., Mandal, A., Dragonetti, A., Abzaliev, A., Tonja, A. L., Balcha, B. F., Whitehouse, C., Salamea, C., Velasco, D. J., Adelani, D. I., Meur, D. L., Villa-Cueva, E., Koto, F., Farooqui, F., ... Aji, A. F. (2024). Cvqa: Culturally-diverse multilingual visual question answering benchmark.
- Tonja, A. L., Azime, I. A., Belay, T. D., Yigezu, M. G., Mehamed, M. A. A., Ayele, A. A., Jibril, E. C., Woldeyohannis, M. M., Kolesnikova, O., Slusallek, P., Klakow, D., & Yimam, S. M. (2024). EthioLLM: Multilingual large language models for Ethiopian languages with task evaluation. In N. Calzolari, M.-Y. Kan, V. Hoste, A. Lenci, S. Sakti, & N. Xue (Eds.), *Proceedings of the 2024 joint international conference on computational linguistics, language resources and evaluation (Irec-coling 2024)* (pp. 6341–6352). ELRA; ICCL. <https://aclanthology.org/2024.Irec-main.561/>
- Adelani, D. I., Masiak, M., Azime, I. A., Alabi, J., Tonja, A. L., Mwase, C., Ogundepo, O., Dossou, B. F. P., Oladipo, A., Nixdorf, D., Emezue, C. C., Al-azzawi, S., Sibanda, B., David, D., Ndoela, L., Mukiibi, J., Ajayi, T., Moteu, T., Odhiambo, B., ... Stenetorp, P. (2023). MasakhaNEWS: News topic classification for African languages. In J. C. Park, Y. Arase, B. Hu, W. Lu, D. Wijaya, A. Purwarianti, & A. A. Krisnadhi (Eds.), *Proceedings of the 13th international joint conference on natural language processing and the 3rd conference of the asia-pacific chapter of the association for computational linguistics (volume 1: Long papers)* (pp. 144–159). Association for Computational Linguistics. <https://doi.org/10.18653/v1/2023.ijcnlp-main.10>
- Tonja, A. L., Belay, T. D., Azime, I. A., Ayele, A. A., Mehamed, M. A., Kolesnikova, O., & Yimam, S. M. (2023). Natural language processing in Ethiopian languages: Current state, challenges, and opportunities. In R. Mabuya, D. Mthobela, M. Setaka, & M. Van Zaanen (Eds.), *Proceedings of the fourth workshop on resources for african indigenous languages (rail 2023)* (pp. 126–139). Association for Computational Linguistics. <https://doi.org/10.18653/v1/2023.rail-1.14>
- Kreutzer, J., Caswell, I., Wang, L., Wahab, A., van Esch, D., Ulzii-Orshikh, N., Tapo, A., Subramani, N., Sokolov, A., Sikasote, C., Setyawan, M., Sarin, S., Samb, S., Sagot, B., Rivera, C., Rios, A., Papadimitriou, I., Osei, S., Suarez, P. O., ... Adeyemi, M. (2022). Quality at a glance: An audit of web-crawled multilingual datasets. *Transactions of the Association for Computational Linguistics*, 10, 50–72. [https://doi.org/10.1162/tacl\\_a\\_00447](https://doi.org/10.1162/tacl_a_00447)
- Adelani, D. I., Abbott, J., Neubig, G., D'souza, D., Kreutzer, J., Lignos, C., Palen-Michel, C., Buzaaba, H., Rijhwani, S., Ruder, S., Mayhew, S., Azime, I. A., Muhammad, S. H., Emezue, C. C., Nakatumba-Nabende, J., Ogayo, P., Anuoluwapo, A., Gitau, C., Mbaye, D., ... Osei, S. (2021). Masakhaner: Named entity recognition for african languages. *Transactions of the Association for Computational Linguistics*, 9, 1116–1131. [https://doi.org/10.1162/tacl\\_a\\_00416](https://doi.org/10.1162/tacl_a_00416)

## PREPRINT

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- Azime, I. A., Belay, T. D., Klakow, D., Slusallek, P., & Chhabra, A. (2025). Bridging the culture gap: A framework for llm-driven socio-cultural localization of math word problems in low-resource languages. *arXiv preprint arXiv:2508.14913*.

## REFERENCES

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Available upon Request