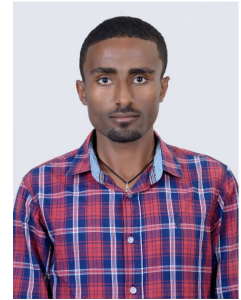Curriculum Vitae – Last updated June 5, 2023

Tadesse Destaw Belay (MSc.)

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Employment History

09/2021 – Current	🔖 **Lecturer and Researcher**, Kombolcha Institute of Technology, Wollo University, Ethiopia. Teach basic and advanced programming, database, and networking courses, conduct research activities, participate at Lacuna Project, Amazon grant, participate in the development and evaluation of faculty and department curriculum.
09/2019 – 09/2021	🔖 **Study Leave**, Bahir Dar Institute of Technology , Bahir Dar University, Ethiopia. Study Master of Science in Computer Science
01/2018 – 09/2019	🔖 **Ass. Lecturer**, Kombolcha Institute of Technology, Wollo University, Ethiopia. Provide basic and advanced course lectures for undergraduate students and coordinate different activities in the Department of Information Technology.

Education

09/2019 – 09/2021	🔖 **Department of Computer Science, Bahir Dar University, Ethiopia.** **M.Sc.** in Computer Science **Thesis**: Impacts of homophone normalization on semantic models for Amharic
05/2017 – 01/2018	🔖 **AppFactory Academy Program Trainee**, in collaboration of Wollo University, Microsoft 4Africa and Tulane International University, at Wollo University, Ethiopia. **Advanced diploma** in Software Development **Project**: One Card System for Wollo University
09/2013 – 06/2017	🔖 **Department of Information Technology, Kombolcha Institute of Technology, Wollo University, Ethiopia.** **B.Sc.** in Information Technology **Project**: Online Job Portal System for Wollo University

Research Directions

Social NLP	🔖 Hate speech, Sentiment analysis, fake news and misinformation
Semantics	🔖 Text similarity, complex word identification, word embedding
ML/AI	🔖 Machine learning for NLP applications, adaptive learning
Annotation	🔖 Web-based annotation tool (WebAnno), Social network-based annotation (ASAB), crowdsourcing (MTurk + Toloka)
Low-resource	🔖 Research for EthioNLP, collect datasets, build models

Teaching

ITec2042 2022	🔖 Lecture and Practical Classes: Advanced Internet Programming II (PHP)

Teaching (continued)

ECEg1052 2022	🔖	Lecture and Practice : Computer Programming (C++)
ITec1041 2018	🔖	Practical Classes : Fundamentals of Internet Programming I (HTML, CSS, and JavaScript)
ITec3054 2018/19	🔖	Practice Classes: Advanced Programming (Java)
ITec4143 2018/19	🔖	Lecture: Information Assurance and Security

Research Projects

Projects

HEALTH-AI	🔖	**Data Science and AI Approaches for Neonatal Health Data, the Challenges and Opportunities: In case of South Wollo, Ethiopia**: This research project aims : 1) Explore digitizing strategies for hospitals that manage their patients, 2) Investigate how to apply data science and AI techniques to healthcare information of partially/fully digitized hospitals, 3) Find insightful information from neonatal data using data science and AI approaches that consider local context, and 4) To showcase how data science is helpful to make evidence-based health-care/policy decision to improve patient care/efficient use or resources. Role:PI. Status:on progress. The project running from January 23 to September 2023 with a a total amount of 125k ETB.

Skills

Languages	🔖	Strong reading, writing and speaking competencies for **English** and **Amharic**. Intermediate level of speaking and reading for **Geez**
Coding	🔖	Python | Java | SQL | XML/XSL | JSON |
ML & Tools	🔖	PyTorch, scikit-learn, spaCy, NLTK, WebAnno, Toloka
Databases	🔖	MySQL | PostgreSQL | Elasticsearch
Web Dev	🔖	Flask | FastAPI | Html | css | JavaScript | Apache/Tomcat Web Server | WordPress
Misc.	🔖	Academic research | teaching | training | consultation | Data science

Miscellaneous Experience

Awards, Funding and Scholarships

2022	🔖	**Google Africa Travel Grants**: to present my paper at 1st Annual Meeting of the ELRA/ISCA Special Interest Group on Under-Resourced Languages (SIGUL 2022), Workshop of LREC 2022, Marseille, France
2021	🔖	**EMNLP2021 conference travel award**: to present my paper at the Widening NLP Workshop (WiNLP) located at the EMNLP 2021 Conference, Dominican Republic
2022	🔖	**EMNLP 2022 conference Grant**: to present my paper at the Widening NLP Workshop (WiNLP 2022) located at the EMNLP 2022 Conference, Abu Dhabi

Extracurricular Activities

EthioNLP	🔖	Member of EthioNLP, research on Ethiopian Languages NLP
Masakhane	🔖	Member of Masakhane, a grassroots NLP community for Africa, by Africans

Research Publications

Conference Proceedings

- **Belay, T. D.**, Ayele, A.A., Gelaye, G., Yimam, S. M., Biemann, C. (2021): Impacts of Homophone Normalization on Semantic Models for Amharic. Proceedings of the Third International Conference on ICT for Development for Africa (ICT4DA 2021), pp. 101-106, Bahir Dar, Ethiopia

- Tegegne, T., Abebe, T., Yalewu, B., **Belay, T. D.**, (2022): Dialect-Based Noisy Speech Dataset, Pre-Processing Tools, and Recognition Models for Amharic. Proceedings of the Forth International Conference on ICT for Development for Africa (ICT4DA 2022), pp. 90-95, Bahir Dar, Ethiopia

- **Belay, T. D.**, Tonja, A. L., Kolesnikova, O., Yimam, S. M., Ali, A., Bogale, S., Sidorov, G., Gelbukh, A. (2022): The Effect of Normalization for Bi-directional Amharic-English Neural Machine Translation. Proceedings of the Forth International Conference on ICT for Development for Africa (ICT4DA 2022), pp. 84-89, Bahir Dar, Ethiopia

- Ayele, A. A., **Belay, T. D.**, Biemann, C., Tegegne, T., Yimam, S. M. (2022): Hate Speech Data Collection, Annotation and Classification Models for Amharic Twitter Dataset. The 17th Conference of the European Chapter of the Association for Computational Linguistics (EACL 2023), Dubrovnik, Croatia, under review

- Ayele, A. A., **Belay, T. D.**, Biemann, C., Tegegne, T., Yimam, S. M. (2022): The 5Js in Ethiopia: Amharic Hate Speech Data Annotation using Toloka Crowdsourcing Platform. Proceedings of the Forth International Conference on ICT for Development for Africa (ICT4DA 2022), pp. 114-120, Bahir Dar, Ethiopia

Workshop Proceedings

- Tonja, A. L., **Belay, T. D.**, Azime, I. A., Ayele, A. A., Mehamed, M. A., Kolesnikova, O., and Yimam. S. M. (2023): Natural Language Processing in Ethiopian Languages: Current State, Challenges, and Opportunities, The Fourth workshop on Resources for African Indigenous Languages (RAIL 2023) co-located with EACL 2023, Dubrovnik, Croatia

- Muhammad, S. H., Abdulmumin, I., Ayele, A. A., Ousidhoum, N.,Adelani, D. I., Yimam, S. M., Ahmad, I. S., Beloucif, M., Mohammad, S., Ruder, S., Hourrane, O., Brazdil, P., Ali, F. D. M. A., Davis, D., Osei, S., Bello, B. H., Ibrahim, F., Gwadabe, T., Rutunda, S., **Belay, T. D.**, Messelle, W. B., Balcha, H. B., Chala, S. A., Gebremichael, H. A., Opoku, B., and Arthur S. (2023): AfriSenti: A Twitter Sentiment Analysis Benchmark for African Languages. Proceedings of the African NLP in the Era of Large Language Models (AfricaNLP 2023) at ICLR 2023, Rwanda

- Bahiru, T. K., Manjula, V.S., Akele, T.B., Tesfaw, E.A. and **Belay, T. D.**, (2023): Mining Road Traffic Accident Data for Prediction of Accident Severity. In 2023 International Conference on Intelligent Data Communication Technologies and Internet of Things (IDCIoT), pp. 606-612, IEEE.

- Ayele A. A., **Belay T. D.**, Yimam, S. M., Dinter S., Asfaw, T. T., Biemann C. (2022): The 5Js in Ethiopia: Amharic Hate Speech Data Annotation Using Toloka Crowdsourcing Platform, The Sixth Widening Natural Language Processing Workshop (WiNLP 2022) in conjunction with EMNLP 2022, Abu Dhabi, UAE

- **Belay T. D.**, Tonja A. L., Kolesnikova O., Yimam, S. M., Ayele A. A., Haile S.B., Sidorov G., Gelbukh A. (2022): The Effect of Normalization for Bi-directional Amharic-English Neural Machine Translation, The Sixth Widening Natural Language Processing Workshop (WiNLP 2022) in conjunction with EMNLP 2022, Abu Dhabi, UAE

- **Belay, T. D.**, Yimam, S. M., Ayele, A. A., and Biemann, C. (2022): Question Answering Classification for Amharic Social Media Community Based Questions, The 1st Annual Meeting of the ELRA/ISCA Special Interest Group on Under-Resourced Languages (SIGUL 2022), Marseille, France.

Research Publications (continued)

- **Belay, T. D.**, Ayele A.A. and Yimam, S. M.. (2021): The Development of Pre-processing Tools and Pre-trained Embedding Models for Amharic. Proceedings of The fifth WiNLP ("Widening NLP") Workshop held in conjunction with EMNLP 2021, Punta Cana, Dominican Republic.
- **Belay, T. D.**, Yimam, S. M., Ayele, A.A., Gelaye, G., Biemann, C. (2021): Impacts of Homophone Normalization for Amharic Natural Language Processing. Proceedings of the 2nd Workshop on African Natural Language Processing (AfricaNLP) at EACL 2021, Virtual Event

References

Available on Request