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Anteneh Yehalem

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ABOUT ME

Dedicated and results-oriented professional with a strong background in **Artificial Intelligence** and **Data Science**. Holding an MSc in Artificial Intelligence and Data Science for Bahir Dar University, I have demonstrated proficiency in **Python**, **machine learning**, and **deep learning frameworks** such as **PyTorch**. My skills extend to full-stack web development using the **MERN stack**. Additionally, I have experience in teaching **Python** and **machine learning** in a part-time capacity, further solidifying my expertise in these fields. Passionate about developing innovative solutions, I am seeking opportunities to contribute to research, industrial projects, and academia, including PhD positions.

EDUCATION AND TRAINING

14 APR 2022 – 3 AUG 2024 Bahir Dar, Ethiopia

MSC IN ARTIFICIAL INTELLIGENCE AND DATA SCIENCE Bahir Dar Univesity

- Research Method and Professional Ethics for AI and DS, Machine Learning, Applied Statistics for AI and DS, Natural Language Processing(NLP), Deep Learning: Method and Application, Image processing and Computer Vision, Business Intelligence and Data Analytics, Data Privacy and Protection

Website https://bit.bdu.edu.et/ | **Final grade** 3.63 | **Thesis** End-to-End Continuous Ethiopian Sign Language Recognition

13 MAR 2017 – 30 JUL 2021 debre tabor, Ethiopia

BSC COMPUTER SCIENCE Debre Tabor University

- Introduction to Computer Science, Fundamental of Programming I, Communicative English Skill, Linear Algebra, Fundamental of Programming II, Object Oriented Programming, Digital Electronics, Fundamental of Data Base, Advanced Programming, Advanced Database, Internet Programming

Website https://dtu.edu.et/ | **Final grade** 3.63 | **Thesis** Online Hospital Management System (PHP)

RESEARCH

9 MAY 2023 – 7 MAY 2024

End-to-End Continuous Ethiopian Sign Language Recognition

This research addresses the challenges of recognizing continuous sequences of Ethiopian Sign Language (EthSL) using an end-to-end approach. The study developed a novel dataset comprising 1,320 sentences performed by 22 different signers. The model utilized a 2D convolutional network for spatial feature extraction, followed by a 1D convolution for capturing temporal features, and a Bidirectional Long Short-Term Memory (BiLSTM) network for recognizing long-term temporal patterns. The results achieved Word Error Rates (WER) of 8.02% for signer independence and 47.02% for unseen sentences, highlighting the model's robustness and areas for further improvement.

Developing Amharic Sign Language Recognition Model for Amharic Characters Using Deep Learning Approach

This research focused on the recognition of Amharic sign language alphabets using Convolutional Neural Networks (CNN). The model was designed with three major components: preprocessing, feature extraction, and classification. The study achieved a 99.9% accuracy in recognizing seven Amharic alphabet signs, demonstrating the effectiveness of CNN in Amharic Sign Language recognition.e description...

Development of a Model for the Prediction of Road Crash Severity Using Artificial Neural Networks: A Case Study of Bahir Dar City

This study aimed to predict road crash severity using Artificial Neural Networks (ANN) and compare its performance with a multinomial logistic regression model. The research utilized traffic crash data from 2010 to 2022 in Bahir Dar City, analyzing factors such as driver demographics, road conditions, and environmental variables. The ANN model outperformed the multinomial logistic regression, achieving an accuracy of 89%, compared to 58% by the logistic model, demonstrating its effectiveness in predicting crash severity

PROJECTS

Breast Cancer Prediction Using Machine Learning Approach

I developed a breast cancer prediction model using Support Vector Machine (SVM) as part of my M.Sc. in Artificial Intelligence and Data Science. The model was trained on the Wisconsin Breast Cancer dataset, effectively classifying tumors as benign or malignant. Through careful data preprocessing, feature selection, and 10-fold cross-validation, the SVM model achieved a classification accuracy of 98.57%, outperforming other methods in specificity and sensitivity. This project demonstrates the potential of machine learning in enhancing early detection, thereby improving patient outcomes in healthcare.

Named Entity Recognition for Amharic Characters

I developed a model to identify and classify named entities in Amharic text. Using machine learning techniques, the model accurately recognizes entities such as persons, organizations, and locations, improving Amharic language processing for tasks like information extraction and question answering. This work contributes to the advancement of natural language processing (NLP) for underrepresented languages.

Part of Speech for Amharic Character using Machine Learning Approach

"I developed a machine learning-based Part of Speech (POS) tagger for Amharic, a morphologically rich language. Using statistical models like Hidden Markov Models (HMM) and hybrid techniques, I created a system that accurately assigns POS tags to Amharic text. This work improved the accuracy of Amharic language processing tasks such as text-to-speech, information retrieval, and machine translation, contributing to advancements in natural language processing for underrepresented languages."

E-Commerce Application Development (MERN Stack)

Developed a fully functional e-commerce application using the MERN stack (MongoDB, Express.js, React.js, Node.js). The app includes features like user authentication, product management, shopping cart, payment gateway integration, and order tracking. Leveraged MongoDB for database management, Express.js and Node.js for building the backend API, and React.js for a dynamic and responsive frontend. The project emphasized secure, scalable, and efficient web application development, implementing RESTful APIs, JWT for authentication, and Redux for state management

Online Hospital Management System (PHP)

Designed and implemented an online hospital management system using PHP, MySQL, and JavaScript. The system streamlines hospital operations by providing modules for patient registration, appointment scheduling, medical record management, billing, and staff management. Utilized PHP for server-side scripting and MySQL for database management to ensure data integrity and security. JavaScript was employed to enhance user interaction and improve the overall user experience. The project aimed at optimizing hospital workflows, improving patient care, and providing a scalable solution for healthcare administration.

WORK EXPERIENCE

2 DEC 2022 – 6 FEB 2023 Bahir Dar, Ethiopia

INFORMATION TECHNOLOGY EDUCATOR & AI ENGINEER

- Taught **Python** programming, **machine learning**, and **AI concepts** to students at various levels, both in-person and online.
- Instructing Primary School Students in Information Technology
- Developed and delivered course content, including tutorials and hands-on workshops, focusing on **Python programming** and **machine learning algorithms**.
- Designed projects and assignments that enabled students to apply **machine learning** concepts, including **data preprocessing**, model development, and evaluation.

6 MAR 2020 – 8 JUN 2020 Bahir Dar, Ethiopia

INTERN - AMHARA SCIENCE AND TECHNOLOGY BUREAU 100

- Collaborated in a team to build a **Vehicle Management System** using **JavaServer Faces (JSF)**, providing a comprehensive solution to manage vehicle assignments, maintenance schedules, and fleet tracking
- Participated in the design and development process, contributing to system architecture and code optimization.
- Gained hands-on experience in **software development** and **project management**, working with industry professionals.
- Conducted testing and debugging to ensure system reliability and security.

LANGUAGE SKILLS

Mother tongue(s): **AMHARIC**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C2	C2	C2	C2	C2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

RECOMMENDATIONS

Birhanu Hailu Machine and Deep Learning Teacher

During my studies at Bahir Dar University (Poly), I had the privilege of learning from Dr. Birhanu Hailu, who taught me advanced machine learning and deep learning techniques. Under his guidance, I developed a strong foundation in designing and implementing various machine learning models and deep neural networks. The coursework covered essential topics such as Convolutional Neural Networks (CNNs), Recurrent Neural Networks (RNNs), and Long Short-Term Memory (LSTM) networks, enabling me to apply these techniques to real-world data. My training with Dr. Birhanu Hailu, was instrumental in advancing my understanding of complex algorithms and their practical applications, culminating in the development of an end-to-end model for Ethiopian Sign Language recognition.

Email birhanu.hailub@gmail.com

Link https://www.linkedin.com/in/birhanu-hailu/

Mekonnen Wagaw Data Privacy Teacher

Under the guidance of Dr. Mekonnen Wagaw, I had the opportunity to advance my knowledge and skills in Artificial Intelligence and Data Science. Dr. Wagaw's instruction encompassed key areas such as data privacy, ethical considerations in AI, and advanced research methodologies. This comprehensive training enabled me to apply sophisticated analytical techniques and conduct high-quality research, particularly in my projects on Ethiopian Sign Language Recognition. Dr. Wagaw's mentorship played a crucial role in enhancing my research capabilities and technical proficiency, equipping me with the expertise needed to tackle complex challenges in the field.

Email monalitha@gmail.com

Link https://scholar.google.com/citations?user=xf50aHQAAAAJ&hl=en

PROFESSIONAL EXPERIENCE

Judge, Indaba Ideathon 2024

- Served as a judge for the Indaba Ideathon, evaluating projects in AI and data science.
- Assessed innovative solutions in the field, providing constructive feedback and helping select winners.
- Contributed expertise to foster innovation and learning among participants in the African AI community.

HONOURS AND AWARDS

8 NOV 2021

MSc Scholarship, Bahir Dar University – Bahir Dar University, Ethiopia

Received a highly competitive scholarship for the MSc program in Artificial Intelligence and Data Science at Bahir Dar University. The scholarship was awarded based on exceptional academic performance and a rigorous selection exam, where I demonstrated outstanding knowledge and skills in the field of AI and Data Science. This scholarship recognizes my dedication, potential, and ability to contribute to advancements in these areas, providing me with an opportunity to further my studies and research.