

Birehan Zewde

AI / Machine Learning Engineer

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PROFILE

I am an AI/ML Engineer with a Software Engineering background, specializing in Artificial Intelligence. I've developed AI systems using LLMs and RAG to solve real-world problems and uncover valuable insights. At Adludio, I improved ad performance, and I also led a healthcare project that used AI to recommend doctors and hospitals. I'm always eager to learn, grow, and apply my skills in AI to bring value and make a real impact.

SKILLS

Programming Languages Python, C++, JavaScript, C#, Java	Data Analysis Pandas, Numpy, Matplotlib, Plotly, Seaborn, Jupyter Notebook	Data Engineering Data modeling, EDA, ELT, ETL, Airflow, DBT, Redash, Spark
Machine Learning tools Huggingface, Transformers, Langchain, Scikit-learn, PyTorch, Tensorflow	MLOps Git, Docker, CI/CD, AWS	ML Concepts Regression, Clustering, Classification, Predictive modeling

PROFESSIONAL EXPERIENCE

Machine Learning Engineer, Adludio ⓘ • Developed and implemented generative AI solutions, creating a pipeline using internal historical data and external websites content, optimizing ad placements for publishers. • Applied LLMs and RAG to analyze over 10 million publisher sites, delivering suitability and brand safety scores with real-time insights to optimize marketing strategies.	May 2024 – present London, United Kingdom
AI Engineer Team Lead, Eskalate S.C. ⓘ • Led a team of 18 to develop HakimHub, Ethiopia's first medical information recommendation system, revolutionizing healthcare technology with AI-driven solutions. • Leveraged advanced LLMs to personalize symptom assessments and follow-up queries, delivering accurate recommendations for specialized doctors and nearby hospitals.	Mar 2023 – Aug 2023 Addis Ababa, Ethiopia

PROJECTS

Loan Risk Prediction Machine Learning Pipeline ⓘ • Developed an end-to-end loan risk prediction pipeline that automated data ingestion, preprocessing, LightGBM model training, and hyperparameter tuning using FLAML, enhancing the accuracy of loan default risk predictions. • Deployed the model using MLflow for version control and Docker for containerization, serving predictions via API and automating retraining to address drift using GitHub Actions.	Sep 2024 – Sep 2024
Contract Legal Expert System with Retrieval-Augmented Generation (RAG) ⓘ • Built a high-precision Contract Q&A system for Lizzy AI using Retrieval-Augmented Generation (RAG), analyzing legal contracts and answering legal queries via a Flask API. • Enhanced contract analysis with domain-specific training data and advanced retrieval techniques, achieving high performance measured by RAGAS metrics such as faithfulness and answer relevancy.	Feb 2024 – Feb 2024

EDUCATION

Bachelor of Science In Software Engineering (AI Stream), Addis Ababa University (Ranked 10th among African universities and 1st in East Africa) ⓘ OOP, Database, Software Development, Machine Learning, and Natural Language Processing.	Oct 2019 – Jun 2024
AI and Machine Learning Intensive Training, 10 Academy ⓘ Data Analysis, Generative AI, Prompt Engineering and Deep Learning and model deployment.	Dec 2023 – May 2024
A2SV 360° software engineering program, Africa to Silicon Valley backed from Google. ⓘ Advanced data structure and algorithms, system design and software development.	Sep 2022 – Sep 2023

CERTIFICATES AND AWARDS

Machine Learning A-Z: AI, Python ⓘ Machine Learning (Python), LLMs, NLP, Deep Learning, Model Evaluation, Feature Engineering
Machine Learning with Python ⓘ Linear Classification, KNN, Decision Trees, Regression, Support Vector Machines