PIERRETTE UMUTONIWASE

PROFESSIONAL SUMMARY

Recent graduate in Energy Engineering and Software Engineering (Machine Learning track) with a strong interest in sustainability, data, AI, and technologies that makes a difference in people's lives. My experience ranges from building machine learning models to the hands-on work of annotating, cleaning, and preparing datasets that make those models possible. I enjoy work that requires patience, precision, and collaboration, and I am excited about contributing those skills to building scalable AI solutions for real-world challenges in the public sector.

SELECTED PROJECTS & EXPERIENCE

Hatespeech detection_Capstone Project, 04/2025 - 07/2025
ALU - Kigali

- Built a text classification model for a low-resource language.
- Personally handled the preprocessing and labeling of raw text, ensuring balanced and reliable data for training.
- Learned the importance of patience and consistency in preparing data for real-world applications.
- Conducted error analysis, expanded literature review, and implemented model improvements.

Intern, 09/2024 - 11/2024
ACE-ESD - Kigali, Rwanda

- Supported research and technical reporting on sustainable energy projects.
- Strengthened collaboration and data handling skills in a multidisciplinary environment.
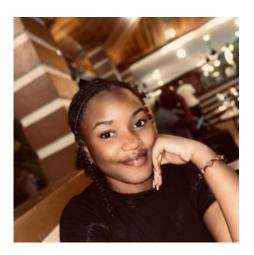
Customer Support Chatbot using Transformer Model
ALU - Kigali

- Fine-tuned a Transformer model (Hugging Face) on customer support data.
- Gained hands-on practice in reviewing and annotating dialogue data, making sure the chatbot could handle edge cases smoothly.
- Evaluated the chatbot with NLP metrics and deployed it with a simple interface.

IMDB Sentiment Analysis Project
ALU - Kigali

- Conducted comparison of traditional ML (Logistic Regression) and Deep Learning (LSTM) for text classification.

CONTACT

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SKILLS

- Careful data annotation and validation for ML projects
- Preprocessing: cleaning, labeling, tokenization, embeddings
- Python, SQL, Git/GitHub, Flask, Django
- Machine Learning: Logistic Regression, LSTM, Transformers, RL (DQN, PPO)
- Strong communication and teamwork across diverse groups

PROFILES

- https://upierrette-portfolio.netlify.app/
- github.com/Umutoniwasepie

- Executed data preprocessing tasks including text cleaning, tokenization, stopword removal, and embeddings.
- Achieved balanced accuracy across positive and negative sentiment classes from 50,000 reviews.

Reinforcement Learning Simulation
ALU - Kigali

- Created custom OpenAI Gym environment focused on healthcare logistics.
- Developed DQN and PPO agents, optimizing hyperparameters for enhanced performance.
- Visualized agent navigation using PyOpenGL to illustrate movement dynamics.

EDUCATION

B.Sc., **Software Engineering (ML/AI Specialisation)**, **Expected on 06/2026 African Leadership University (ALU)** - Kigali, Rwanda
Relevant Coursework: Python, Data Structures & Algorithms, Software Engineering, Machine Learning, Deep Learning, NLP,LLM, Reinforcement Learning

B.Sc., **Energy Engineering**, **Expected on 10/2025**
University of Rwanda, College of Science And Technology (CST) - Kigali, Rwanda
Relevant Coursework: Thermodynamics, Renewable Energy Systems, Energy Efficiency, Sustainable Design

Automotive Engineering, 2024
Exchange Programme – Hochschule Heilbronn - Germany
Relevant Coursework: Energy systems, sustainability, and technology innovation

EXTRACURRICULAR ACTIVITIES

- SheUnitesAfrica: Active member supporting women's empowerment in tech and innovation

LANGUAGES

Kinyarwanda: First Language

English: C2
Proficient (C2)

French: B1
Intermediate (B1)