HEWITT TUSIIME

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DATA SCIENTIST

Versatile Data Scientist and Software Engineer with expertise in AI-driven solutions, predictive modeling, and data analytics across healthcare, e-commerce, and agriculture sectors. Developed CNNs for depression detection, NLP for low-resourced languages, and automated diagnostics for livestock diseases as well as built scalable data pipelines and responsive applications for efficient data collection. Proficient in Python and skilled in churn prediction, clustering, and market basket analysis to deliver actionable insights. Passionate about leveraging AI to solve real-world challenges and drive innovation.

• Predictive Modeling • Machine Learning • Statistical Analysis • Data Pipelines • Deep Learning • Feature Engineering • Big Data Analysis • Data-Driven Decision Making • Problem Solving • Model Evaluation and Validation

Languages: Python, R, JavaScript
Web: HTML, CSS, React, Node.js
Web/App Servers: Tomcat
Frameworks/Libraries: Flask, Django, Keras, TensorFlow, ScikitLearn, Seaborn, Pandas, Numpy, Spacy, Beautiful Soup
Databases: MySQL
SDLC: Agile
Tools: Maven, Jupyter, Postman, Git, GitHub, MySQL Workbench, Tableau, Kafka, Docker
Platforms: Windows, Linux, Heroku

PROFESSIONAL EXPERIENCE

CAREER NOTE: *Completed on-campus studies and currently taking distance education courses to complete a* ***Master's Degree in Computer Science*** *(Available for full-time, W-2 employment).*

MAKERERE ARTIFICIAL INTELLIGENCE LAB, Kampala, Uganda • 09/2021 – 03/2024
A pioneering research institution dedicated to leveraging advanced technologies in artificial intelligence and data science.

Research Data Scientist
Executed advanced data analysis and machine learning projects, and oversaw end-to-end software development lifecycle whenever needed.

- Developed Convolutional Neural Networks (CNNs) for depression detection from speech data to achieve 90% model accuracy in identifying depression symptoms from voice intonations.
- Engineered data collection pipelines and protocols for AI model training using Apache Kafka and SQL to ensure seamless data flow and improved model performance.
- Applied Natural Language Processing (NLP) techniques for low-resourced languages to enhance language processing capabilities, contributing to more inclusive AI solutions.
- Developed machine learning models for agricultural advisory systems, optimizing crop recommendations and resource allocation for farmers.
- Automated livestock disease diagnostics through AI-driven solutions, improving detection accuracy and response time in veterinary care.
- Contributed to a Fairness Accountability Transparency and Ethics F.A.T.E Project on the use of AI systems to assess creditworthiness for digital microcredit to smallholder farmers in Uganda, contributing to AI applications for social good, fostering innovation in data science and software engineering.
- Contributed to research publications and presented findings at international forums to enhance scientific communication and promote the impact of AI solutions in healthcare and agriculture.

Technologies Used: *Python, HTML5, CSS, JavaScript, React, Android Studio, TensorFlow, Keras.*

JADE E SERVICES UGANDA LIMITED (JUMIA UGANDA), Kampala, Uganda • 07/2020 – 07/2021
A Pan-African technology company that is built around a marketplace, logistics service and payment service.

Data Analyst
Developed predictive models and conducted data analysis to provide insights and support decision-making.

- Developed predictive models for customer churn and user engagement using TensorFlow in Python and R, enhancing user experience and providing insights for retention strategies.
- Engineered customer segmentation strategies through clustering analysis using ScikitLearn in Python and R, supporting targeted marketing efforts and sales initiatives.
- Analyzed e-commerce data using Python and R, extracting actionable insights and creating reports for senior management to support strategic decision-making and business growth.
- Executed market basket analysis using association rule learning in Python and R's arules package, contributing to cross-selling and up-selling initiatives.
- Utilized predictive analytics to forecast transactional behavior on the e-commerce platform, improving marketing campaigns and user interaction strategies.

Technologies Used: *Pandas, BeautifulSoup, NLTK, Spacy, Matplotlib, Seaborn, Tidyverse, ggplot.*

INTERNSHIP EXPERIENCE

Makerere Artificial Intelligence Lab, Kampala, Uganda • 08/2019 – 05/2020
A pioneering research institution dedicated to leveraging advanced technologies in artificial intelligence (AI) and data science to address critical challenges in the developing world.

Research Intern
Contributed in executing advanced data analysis and developing machine learning projects.

- Conducted detailed sentiment analysis research to evaluate the impact of public political figures across various media platforms, employing the TextBlob library in Python for data analysis and sentiment polarity assessment.
- Led the Call Center team in coordinating with smallholder farmers to crowdsource agricultural data, facilitating image classification tasks and contributing to our AI-driven research initiatives.
- Engaged in scientific writing, contributing to blog posts, academic journals, and workshops, disseminating research findings and establishing thought leadership in the field.
- Developed documentation and training protocols for the mobile application, ensuring clarity and effective onboarding for farmers.
- Managed data collection operations, resolving issues and providing regular updates to the Project Manager and management team.

Technologies Used: *Python, HTML, CSS, TextBlob.*

ACADEMIC PROJECTS

Maharishi International University (2024)
Conference Management System: Developed a Spring Boot application for managing conferences, workshops, schedules, registrations, payments, and notifications. Designed the backend with RESTful APIs, a robust database schema, and efficient CRUD operations to streamline event management and user registration.

Makerere University (2022)
MAISHA: Developed a CNN model to detect depression from speech data using Python, Librosa for audio feature extraction, and TensorFlow & Scikit-learn for model development. Designed the model to perform 1D convolution on Mel spectrograms, capturing speech patterns indicative of depression. Ensured accuracy through rigorous evaluation, resulting in a reliable AI tool for automated mental health diagnostics.

EDUCATION

Master of Science in Computer Science
(In progress via distance education; expected completion 04/2027)
Maharishi International University, Fairfield, Iowa
Key Courses: Web Programming, Enterprise Architecture, Algorithms, Software Engineering

Bachelor of Science in Software Engineering
Makerere University, Kampala, Uganda (05/2022)