Bilal EL HAYANI

Master of Science in Data Science & Intelligent Systems
+212 648 76 80 35 | bilalelhayani2@gmail.com | in/belhayani | github.com/belhayani

Education

University Mohammed Premier — Nador, Morocco
Master of Science, Data Science and Intelligent Systems — *2022 – 2024*

University Mohammed Premier — Nador, Morocco
Bachelor of Science BS, Mathematics and Computer Science — *2018 – 2022*

Mohammed VI High School — Ben Taieb, Morocco
High School Diploma in Physics and Chemistry — *2017 – 2018*

Projects

A Fine-Tuned Transformer-Based Approach for Sentiment Analysis of Moroccan Arabic Dialect

- Developed a sentiment analysis system using fine-tuned transformer-based models to analyze Moroccan Arabic dialect in social media text.
- Fine-tuned multiple pre-trained BERT-based models including BERT-base, mBERT, DarijaBERT, MARBERT and QARiB to classify positive, and negative sentiments in Moroccan Arabic.
- Implemented data pre-processing techniques such as tokenization, and dialect-specific normalization to handle the linguistic challenges in low-resource Moroccan dialects.
- Optimized hyperparameters and applied transfer learning techniques to improve model performance, achieving a significant increase in classification accuracy compared to traditional models.
- Evaluated model performance using metrics such as accuracy, F1-score, and confusion matrices, demonstrating the effectiveness of transformer-based models in sentiment classification for underrepresented dialects.
- Built a deployment pipeline using Flask for sentiment prediction and integrated it with a user-friendly web interface for ease of use.

Intrusion Detection Systems Based on Machine Learning Models

- Developed an intrusion detection system using machine learning models to identify and prevent unauthorized access.
- Trained multiple machine learning models, including K-Nearest Neighbors (KNN), and Support Vector Machines (SVM), to classify normal and malicious activities.
- Integrated the trained models into a real-time detection framework, providing immediate alerts for potential security breaches.

Laboratory Management System

- Developed a comprehensive Laboratory Management System using Spring Boot to streamline laboratory operations and improve efficiency.
- Enhanced the system with user authentication and role-based access control for secure data handling.

SMS Spam Classification Using Machine Learning

- Developed a machine learning model to classify SMS messages as spam or legitimate.
- Utilized techniques such as TF-IDF for feature extraction and algorithms including Naive Bayes and Support Vector Machines (SVM).
- Created a user-friendly interface for real-time spam detection.

Web Application for Managing Final Year Projects

- Developed a web application using React, Express, and MySQL to manage final year projects efficiently.
- Designed an intuitive user interface to improve user experience and streamline administrative tasks.

Certifications

Deep Learning Foundations: Natural Language Processing with TensorFlow May, 2024

- **LinkedIn Learning**

Natural Language Processing Specialization May, 2024

- **Coursera**, offered by DeepLearning.AI

Supervised Machine Learning: Regression and Classification October, 2024

- **Coursera**, offered by DeepLearning.AI, Stanford University

Unsupervised Learning, Recommenders, Reinforcement Learning October, 2024

- **Coursera**, offered by DeepLearning.AI, Stanford University

Technical Skills

Languages: Java, Python, C/C++, SQL, JavaScript, HTML/CSS
Frameworks: React, Node.js, ExpressJs
Developer Tools: Git, Docker, VS Code, Visual Studio, IntelliJ, Eclipse
Libraries: Pandas, NumPy, Matplotlib, Tensorflow, Keras, PyTorch, NLTK, Transformers
Databases: MySQL, Oracle, MongoDB