ABSTRACT

Project Title: Developing dynamic model for automated classification and prediction using machine Learning

In the realm of modern data-driven applications, the ability to streamline classification and prediction tasks is essential for enhancing efficiency and user accessibility. The application leverages Streamlit, a Python-based framework, to create an interactive interface that simplifies the end-to-end process of machine learning model development.

Users can dynamically upload datasets, preprocess data, and select appropriate machine learning algorithms for classification tasks. The tool automatically encodes categorical features, handles missing values, and splits data into training and testing sets. It provides the flexibility to experiment with models such as Logistic Regression, Random Forest, and Support Vector Machines.

A key feature of the application is the user input form, where users can manually input feature values to generate real-time predictions using the trained model. The predictions are accompanied by visual insights, such as confidence scores and performance metrics (e.g., accuracy, precision, recall), ensuring interpretability. Additionally, the platform supports exporting trained models for offline use, fostering reusability in different environments.

By combining automation, simplicity, and robustness, this application democratizes machine learning, making it accessible to non-experts while maintaining the flexibility demanded by data professionals. This innovative approach bridges the gap between machine learning concepts and practical implementation, driving efficiency in classification and prediction workflows.

Technologies : Python, Machine Learning, Streamlit framework

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