Phase 1 – Conception Phase

Title : Auto-ML Pipeline Builder

Abstract :

The goal of the Auto-ML Pipeline Builder is to automate the complex process of creating Machine Learning Models. ML model consists of several steps such as Data Preparation, Feature Engineering, Evaluation and Development all this steps require technical knowledge and time. By offering an web-based platform that automatically creates ML pipelines with little assistance from humans.

User can submit datasets in variety including CSV, Excel using an easy-to-use interface. After that the system automatically cleans the data, handles missing values, encodes categorical variables and scale features. Several algorithms are trained using Auto-ML frameworks like PyCaret and Scikit-learn and their performance is assessed usimg evaluation features like accuracy, F1-score or RMSE. The top performing model is chosen and made available to download or as a ready-to-use Python script.

The Auto-ML Pipeline Builder lowers the technical barrier for non-experts and boosts productivity for data professionals by automating the whole machine learning process. This solution bridges the gap between the data and deployable intelligence it provides a scalable, cloud-ready solution that enables users to efficiently convert raw data into actionable insights.

Tech Stack :

- Frontend :- React.js
- Backend :- Python
- ML Freamwork :- PyCaret, Scikit-Learn
- Database :- PostgreSQL/SQLite
- Visualization :- Matplotlib
- Deployment :- Docker/AWS EC2/S3
- Version Control :- Github