GALAKSİYA

ML Engineer Intern Evaluation Case

Develop a REST API that forecasts stock prices according to the input features. The dataset can be downloaded from Kaggle.

Requirements

- Python virtual environment usage is required.
- The libraries must be extracted to a requirements file and delivered with code. (pip list > requirements.txt)
- The model must be trained in a Jupyter Notebook, and EDA (exploratory data analysis) actions must be included in the notebook.
- Develop and compare two time series forecasting models. Select appropriate models from a range of options including traditional statistical methods (e.g., ARIMA) and advanced machine learning techniques (e.g., CNN, LSTM). Conduct a thorough evaluation of model performance using relevant metrics. Clearly document the experimental setup, results, and insights in a tabular format.
    - Remember that not only algorithm alternatives but also data preprocessing, feature engineering, and feature selection methods affect the model's success.
- The API must include the following endpoint.
    - Predict API: Gets the sample as input, makes a prediction using the ML model, and returns the prediction result.
- A REST API framework such as FastAPI or Flask must be used to develop the API.
- The API must use the pre-trained model object, e.g., pickle.
- An instruction documentation for running the API is required, e.g., a simple readme.

Optional Points

- The application must be packaged and run with Docker and Docker Compose.
- An OpenAPI specification is expected.
    - It can be created manually, with a tool, or automatically from the code.

Evaluation

We will evaluate the project regarding code cleanliness, readability, object-oriented best practices, and machine learning success.

- We expect the application of API development practices such as input validation and exception handling. You should handle the exceptions with care.
- You should name variables and methods accordingly and document methods and parameters.
- Improving a model by feature engineering and hyperparameter optimization is expected. Remember that model success is not the only evaluation criterion. But it’s still considered.
- A critical evaluation criterion is a care that the candidate gives. A carefully prepared project and documentation mean a lot to us.