

Ocean Oracles

Contributions :-

1. *Nidhish Doshi*

1. Data Preprocessing

- Handled missing values in the dataset through the method of multiple imputation.
- Visualised data distributions and relationships.
- Implemented data-splitting into training and testing sets.

2. Feature Engineering

- Selected relevant features for the model.
- Performed lag feature creation and moving averages.
- Performed feature scaling and encoding.

3. Model Implementation

- Analysed and compared deep learning models with traditional ML models.
- Development and implementation of Random Forest Regressor model to predict the sea surface temperature.
- Evaluated model performance using cross-validation.

2. *Mallireddy Rupesh*

1. Data Preprocessing

- Conducted exploratory data analysis by testing different methods to fill missing values.
- Normalised the data for uniform scaling.
- Handled temporal data transformations.

2. Feature Engineering

- Engineered interactions between all the other datasets to the sea surface temperature.
- Implemented dimensionality reduction techniques.
- Developed time-series features from sequential data

3. Model Implementation

- Built and tested machine learning and deep learning models (e.g. LSTM, Dense).
- Improved model accuracy through iterative development.
- Implemented neural network architectures for prediction.

3. *Harshit Paras Babariya*

1. Data Preprocessing

- Merged and cleaned multiple data sources.
- Ensured data consistency and integrity.
- Identified and removed outliers from the dataset.

2. Feature Engineering

- Incorporated domain-specific features into the model.
- Created new features such as date-time based on domain knowledge.
- Analysed feature importance through various methods.

3. Model Implementation

- Integrated model evaluation metrics (e.g., RMSE, MAE).
- Developed initial baseline models.
- Built and tested machine learning models (e.g., Linear Regression, Logistic Regression).

This file outlines the specific contributions of each team member to ensure transparency and acknowledgment of individual efforts. Each member played a crucial role in the successful completion of this project.