Summer of Innovation 2024

TWINS OF THE WINDS

Hosted By:

Hardly Human, AI Club, IIT Dharward

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INTRODUCTION

El Niño and La Niña are not two separate weather events, but rather two sides of the same coin – the El Niño–Southern Oscillation (ENSO) cycle. Scientists call these phenomena the El Niño–Southern Oscillation (ENSO) cycle. El Niño and La Niña can both have global impacts on weather, wildfires, ecosystems, and economies. El Niño and La Niña events occur every two to seven years, on average, but they don't occur on a regular schedule. Generally, El Niño occurs more frequently than La Niña.
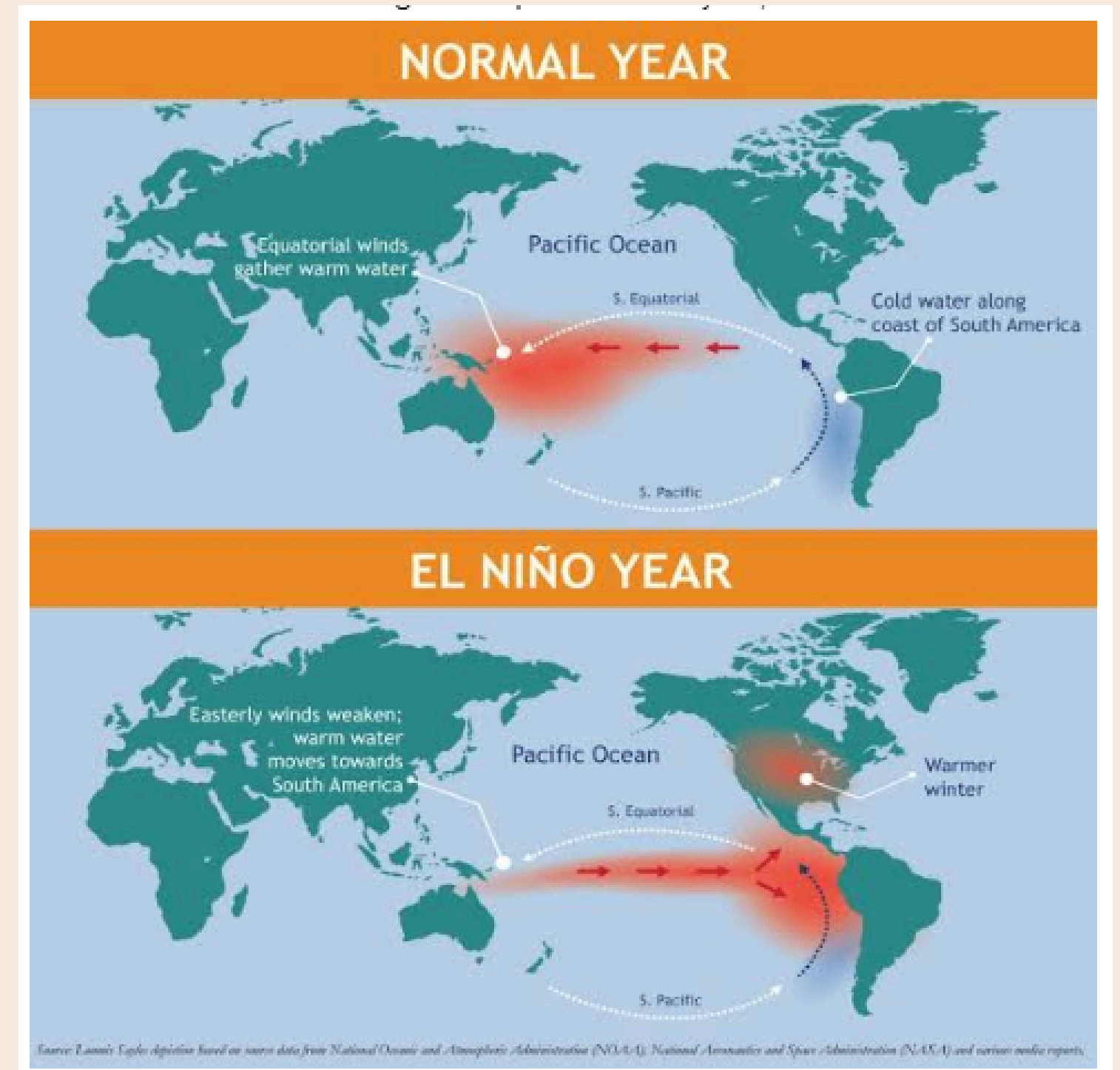
PROBLEM STATEMENT

Task:
- Your Aim is to develop a Machine Learning Model which can take Sequential Data and Generate the Sea Surface Temperature. Sea Surface Temperature is one of the important factor in prediction of El Niño.

Project Objective:
- You have to train you Machine Learning Model on Labelled Data.
- Use the ML model to predict the Unlabelled Data.

NATURE OF DATA

- Date: Day, Month, Year when the observation taken place from the Buoy.
- Latitude and Longitude: Location of Buoy during the observation.
- Wind Data: Two Wind data we have Zonal Wind and Meridional Wind.
- Humidity: Relative Humidity during observation
- Air Temperature
- Sea Surface Temperature(Target Variable)

Teams have to develop a ML model to predict the Sea Surface Temperature from remaining features.
train.csv: Contain Target Variable (Train your ML model on this set)
evaluation.csv and data_1997_1998.csv: Predict the Target Variable (Predicted value need to be Submitted)
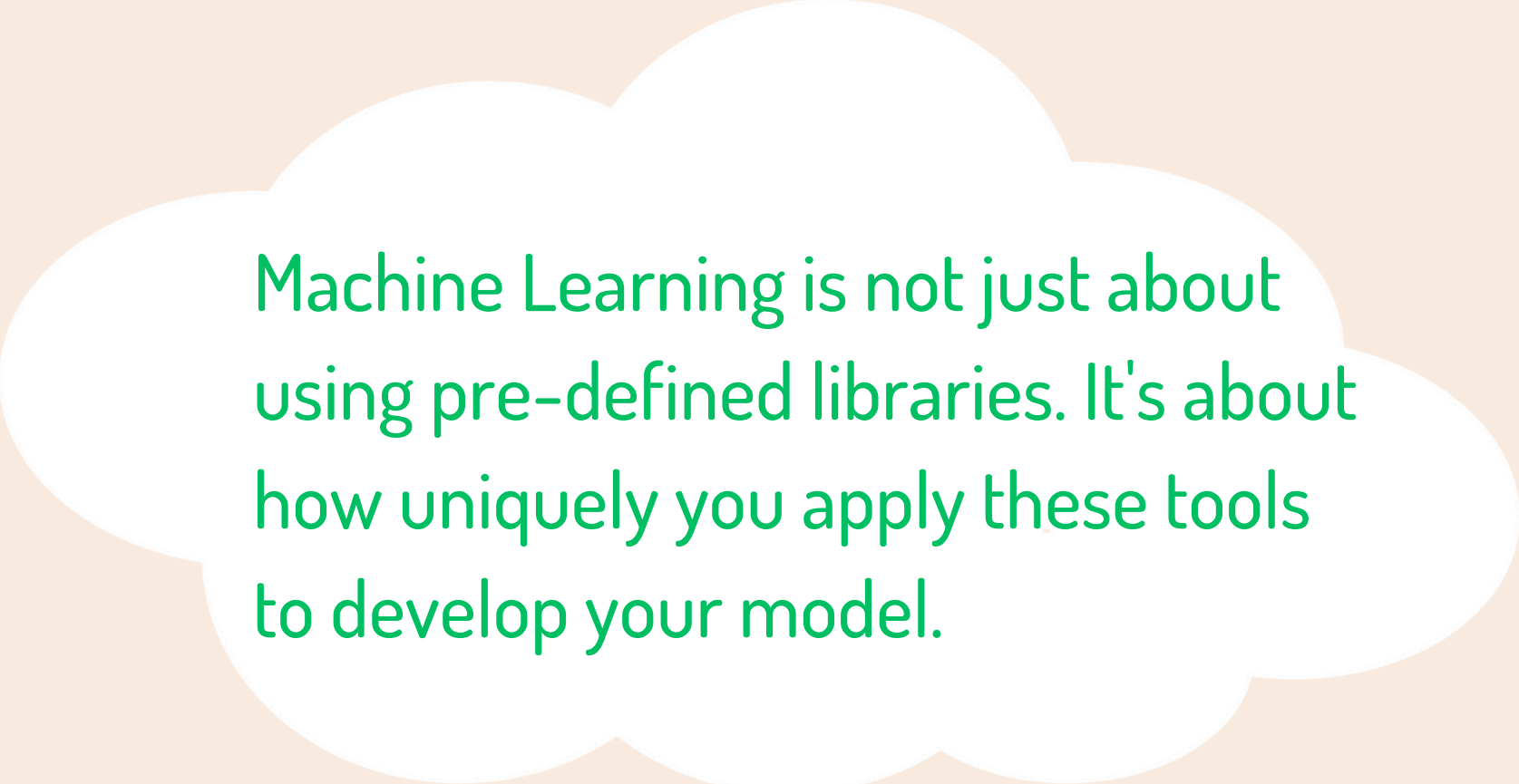
DATASET
HERE

EVALUATION CRITERIA

The main Evaluation Criteria is going to be on the following basis:

- Pre-Processing
- Feature Engineering
- Model Implementation
- Accuracy

We will provide you more details about this on later stage.

Machine Learning is not just about using pre-defined libraries. It's about how uniquely you apply these tools to develop your model.

SUBMISSION

Report/Documentation (PDF)

The teams must create a concise report that includes the workings and outcomes (model performance) as well as their thought process throughout the project

Contribution (PDF)

The teams must create a contribution file which contain which team member have contributed to which part of the project. (If there is 1 Member Team for them no need to create this file)

Submission

The complete project must be submitted as a GitHub repository, which will include all the codes (preferably in Python notebooks), report, contribution and any other required file.

THANK YOU!!

Queries?
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