This is **Black codes** Representing

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REAL TIME CROP MONITORING USING ARTIFICIAL INTELLIGENCE

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PROBLEM STATEMENT

Develop a real time land usage monitoring tool using Satellite data and Artificial Intelligence

ABOUT

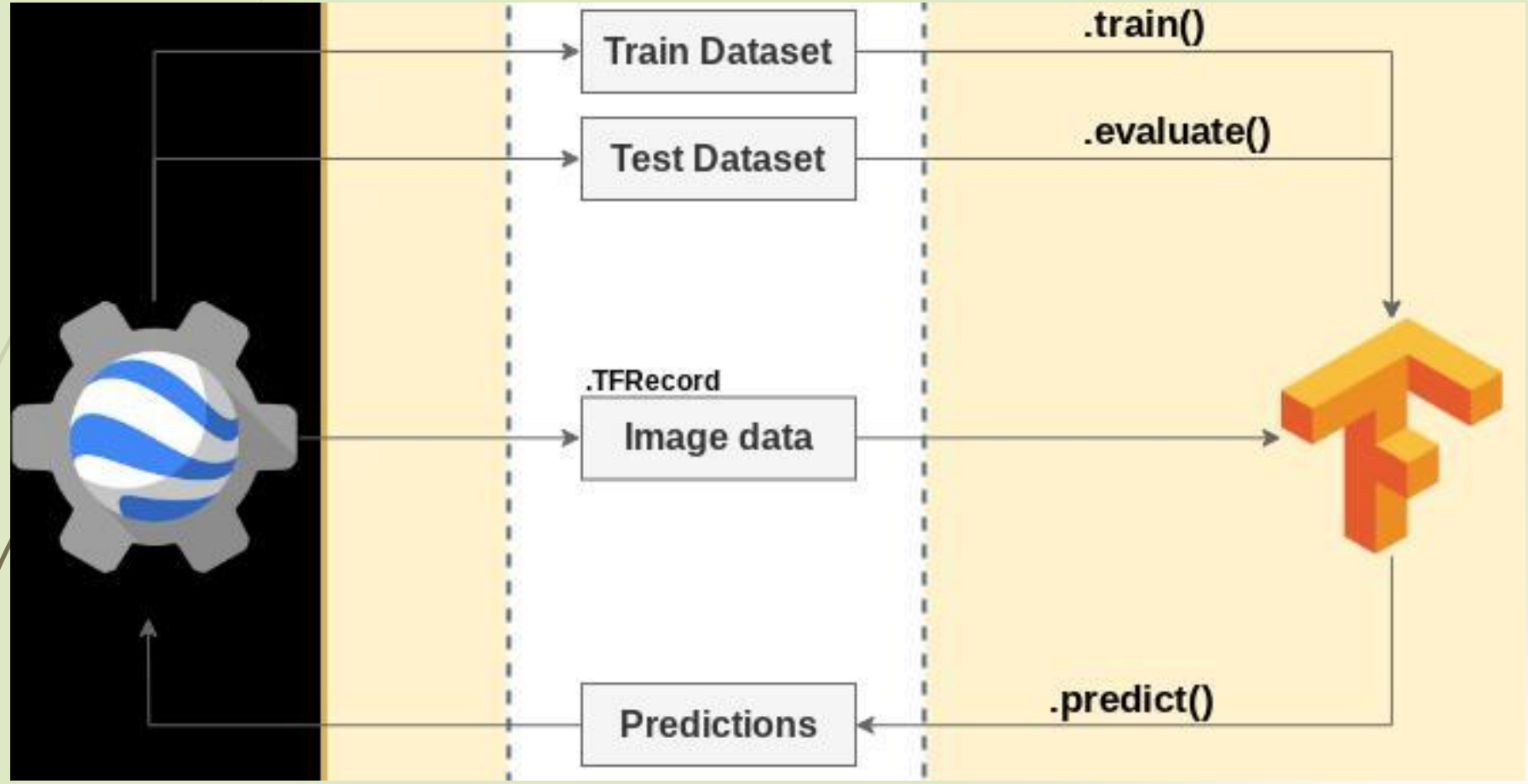
This project demonstrates the capabilities of field monitoring ,crop growth analysis and yield prediction with the help of satellite imagery .

ABSTRACT

- The temperature change and its unpredictability, has caused majority of the agricultural crops in production and maintenance.
- Forecasting or predicting the crop yield well prior to its harvest time would assist the farmers for taking appropriate measures for mercantilism and storage.
- Correct prediction of crop development stages plays a crucial role in crop production management.

- Crop monitoring and forecasting of crop yields for the proposed system are going to be dole out via satellite pictures with low resolution.
- The combination of extensive and extended topographic coverage and its high temporal frequency build these pictures an appropriate choice for the prediction of crop yields and these pictures are trained using artificial intelligence.
- The paradigm distinguishes between crops, the infrared and temperature bands of pictures taken throughout apex season contribute the foremost to the crop prediction.
- The main aim is to match the output of crops to verify whether or not the results are correct for crop yield forecasting then these output are going to be displayed in the map.

USE CASE


Train Dataset
Test Dataset
.TFRecord
Image data
Predictions
.train()
.evaluate()
.predict()

DEPENDENCIES

Earthengine-api , OS , Pandas , urllib , plotly, bumpy , folium

PURPOSE

- GEE integration

It shows the step by step how to integrate Google Earth Engine and TensorFlow 2.0 in the same pipeline (EE->Tensorflow->EE).

TOPICS

- Create a training/testing dataset (in a TFRecord format) using Earth Engine.
- Create functions for parse data (TFRecord -> tf.data.Dataset; Decode the bytes into an image format).
- Shuffle, repeat and batch the data.
- Training and Test a Convolutional Neuronal Network using tensorflow 2.0.
- Making predictions on image data exported from Earth Engine in TFRecord format.
- Upload your results to Earth Engine (asset).

GOOGLE EARTH ENGINE

- It is a platform that combines a multi-petabyte catalog of satellite imagery with planetary-scale analysis capabilities. There are several ways to interact with GEE:

- There are several ways to interact with GEE:

- the Python wrapper library (used in this post) is the best choice to interact with GEE for the following reasons:

  1. Easy to share code.
  2. Easy transition to a web application.
  3. Possibility to integrate with ML/DL frameworks.
  4. Many plotting options (folium, plotly, matplotlib, seaborn ,etc.).

- it's possible to run the Earth Engine Python API in a cloud environment for free.

THANK YOU