Assignment 3

Till now you have successfully made the API, tested the API, Hosted the API, made user analytics and much more! Intense 😅. This was an end to our Data as a Service part!

Let's start with Model as a Service now!

Things you need to do: (Week 1)

1) ***Build the ML Model***
2) ***Build API***
3) ***Build Streamlit***

Note:

1) You need to create a repository inside your organization as ***Assignment3***

2) Make sure there are no errors in your python files when you submit it.

3) Have a requirement.txt file in your repository so we can install packages which you have used.

New Dataset:

This week we will have a new dataset! (Same dataset for all :))

https://www.kaggle.com/datasets/ravirajsinh45/real-life-industrial-dataset-of-casting-product

This dataset is of casting manufacturing product.
Casting is a manufacturing process in which a liquid material is usually poured into a Mould, which contains a hollow cavity of the desired shape, and then allowed to solidify.

Explore the dataset and you must do the following three things with it!

Building ML Model

In this module you will build a ML model with the method assigned to you!

	Methods
Team 1	***Basic CNN***
Team 2	***Transfer Learning***
Team 3	***Recognition Approach***
Team 4	***Augmentation 1: Generate More data***
Team 5 (One man army)	***Augmix***, ***Cutmix***, ***Mixup***

Note 1: Team1, Team 2 and Team 4 you need to take inspiration from the links which have been mentioned above and **NOT COPY** them!

Note 2: This is not a Model building class so the accuracy of the model will not matter while grading but still you should try to achieve a respectable accuracy!

Submission:

1) ***The python files you used for model building. (Team 3 exception)***
2) ***The pickle file of the model you build.***

Fast API implementation/Deployment

Implementation:

This module will be same as the last assignment, create a FAST Api endpoint for prediction function of your model.

This means in your function you should have an input as image and output as the model prediction whether the image has a bottle defect or not!

Submission: Push your codebase of Fast API on GitHub (Assignment 3 Repository)

Deployment:

Same as last assignment, deploy your API on Heroku or any other tool you used!

Submission: The link which will be generated after the deployment.

Streamlit:

Build a basic streamlit front end application which uses input widgets of streamlit to pass the image to model and outputs the prediction from model.

Example: https://peltarion.com/blog/applied-ai/defect-detection

Submission: You need to deploy your streamlit on cloud so that it's accessible to everyone.

Extra Notes:

1) ***You should keep the API authentication and API user logs for this also.***
2) ***Make a new FAST Api or streamlit don't add this as a new functionality to the assignment 2***

This is due this week 16th July 2022 11:59 AM

Any doubts? Message on slack or teams