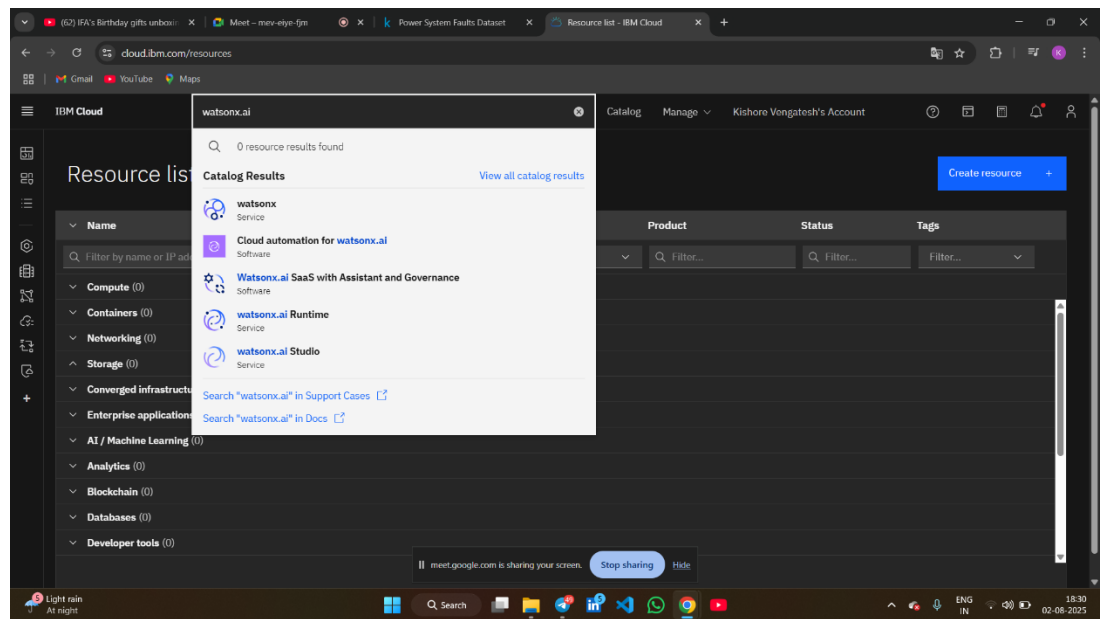


41 – Power System Fault Detection and Classification

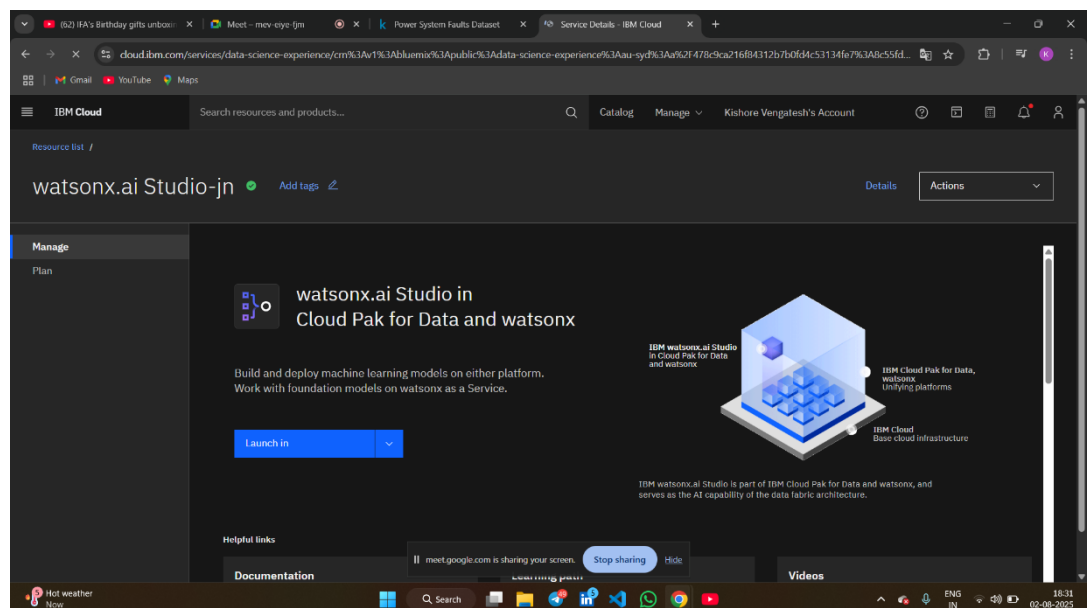
Step 1: Login to IBM Cloud by using Credentials

Step 2: Visit the Resource List and Clean the Resource List.

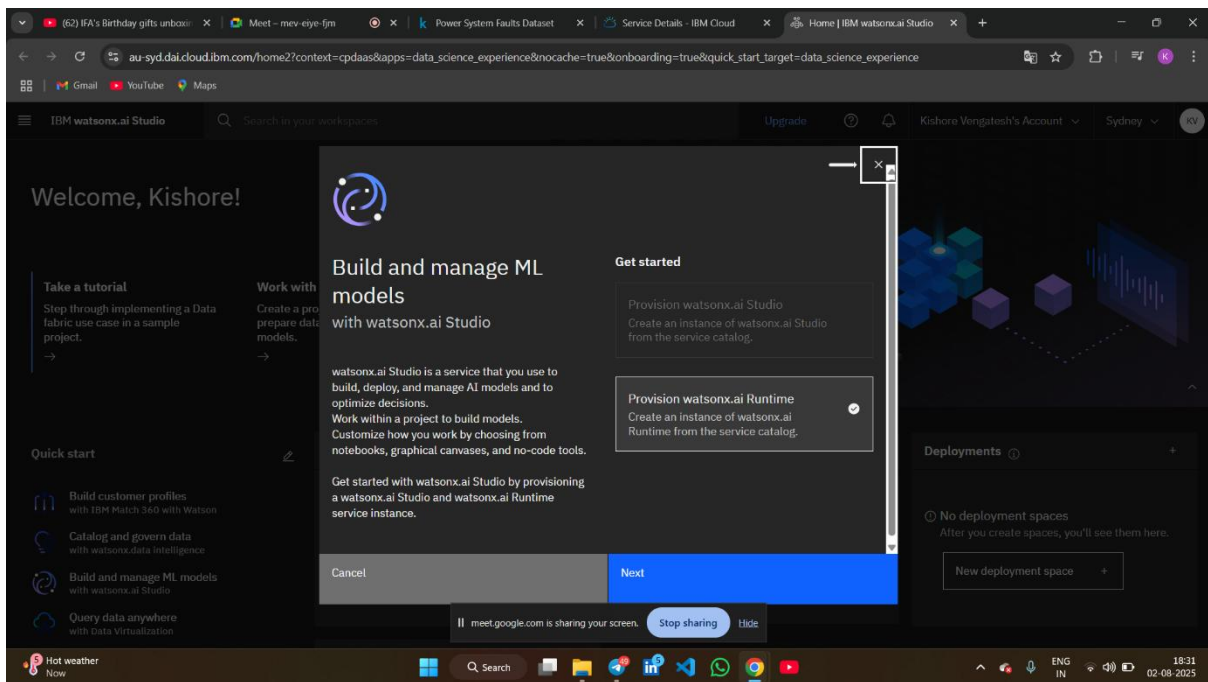
[**Note:** We are Using Lite Version, So, We have able to create a one Instance only].



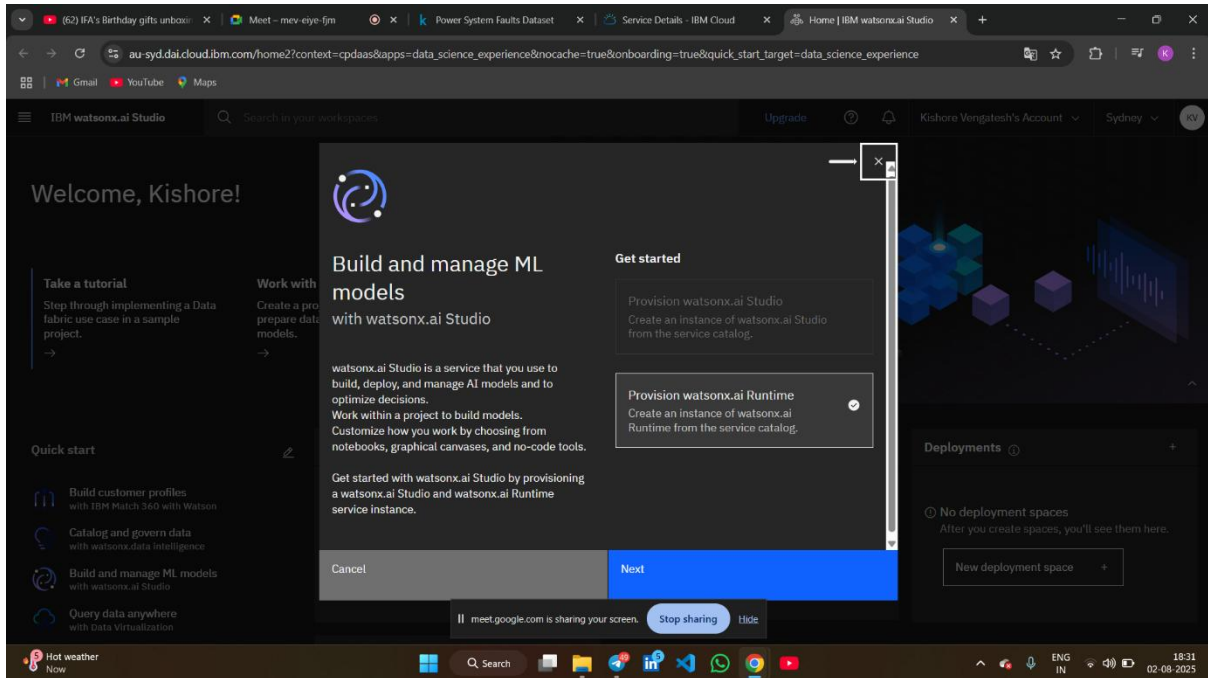
Step 3: Go to the “**Watsonx.ai Studio Service**” in IBM Cloud and Select the service and create an One Instance.



Step4: Create an Runtime which contains Hardware and Software to run an Instance. [**Runtime=PowerHouse**].



Step5: Create an new Project by clicking on New Project tab after the Runtime.



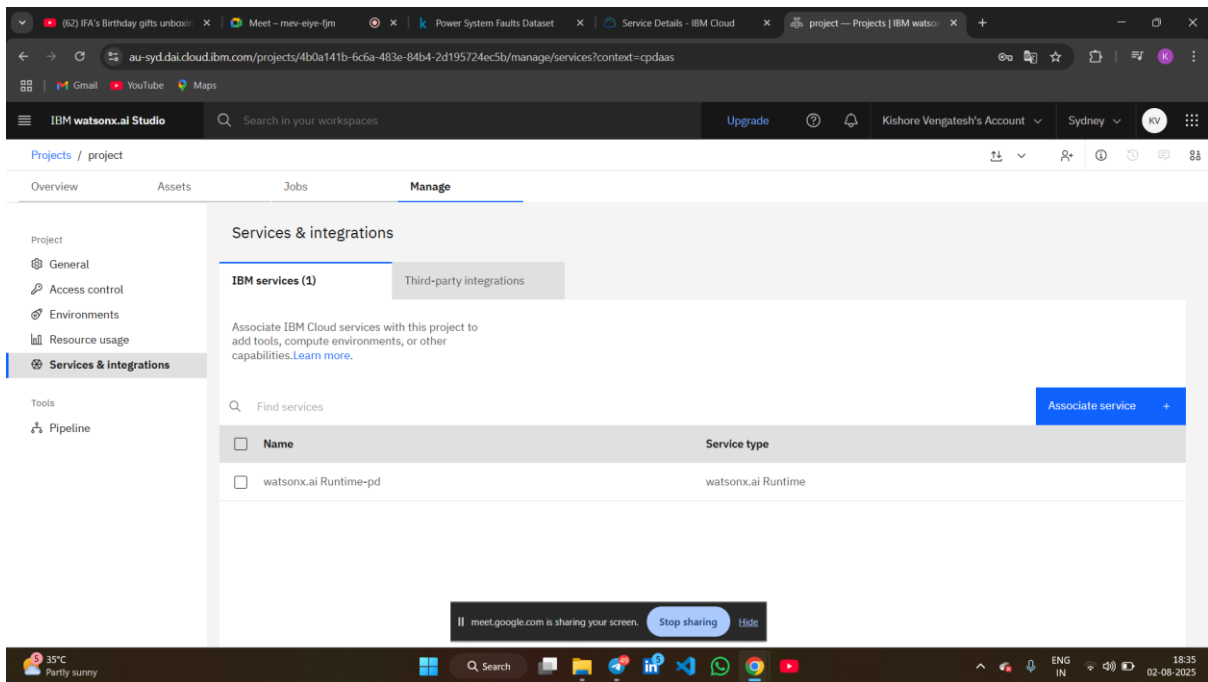
Step6: Give name of Our Project and then add the Storage space also for the Project by Clicking on add(+) icon.

The screenshot displays the IBM Watson AI Studio interface for the Cloud Object Storage service. The main content area shows the 'Create' tab with a 'Pricing plan' section. The 'One-Rate' plan is highlighted, and the 'Lite(deprecated)' plan is also visible. A 'Create' button is present in the right sidebar.

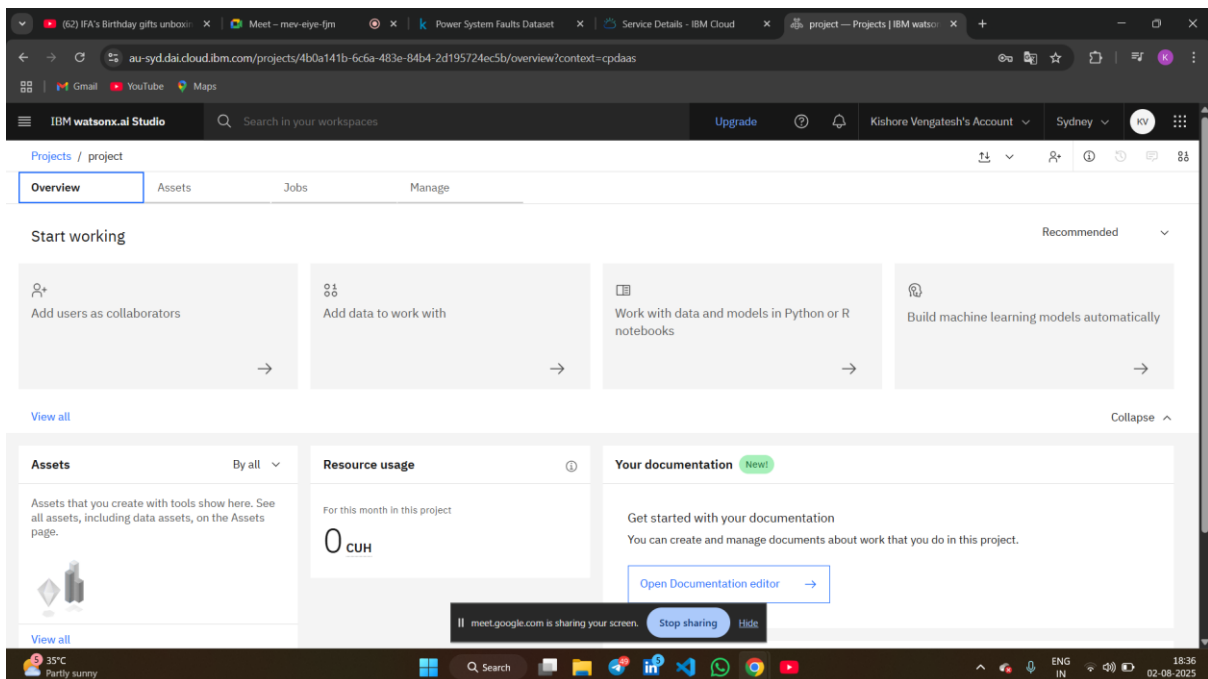
Plan	Features	Pricing
One-Rate	One-Rate Plan is a Pay-as-You-Go option with a single, flat monthly rate (\$/GB) that includes storage, API operations, retrieval, and outbound bandwidth—making it ideal for high-activity workloads with frequent access and data transfer, such as analytics, media, and web apps. The plan includes built-in allowances that scale with stored capacity and offers automatic volume discounts as usage grows	
Lite(deprecated)	Lite plan instance is free to use for Storage capacity up to 25 GB per month. Lite plan instance is used for trial, and can be easily upgraded to Standard plan for unlimited access and full functionality.	Free

[Note: Click on Free Pricing only for the Lite Version]

Step 7: Switch to the manage tag and Click on the Associate Service and add associate the Runtime service to the Project.

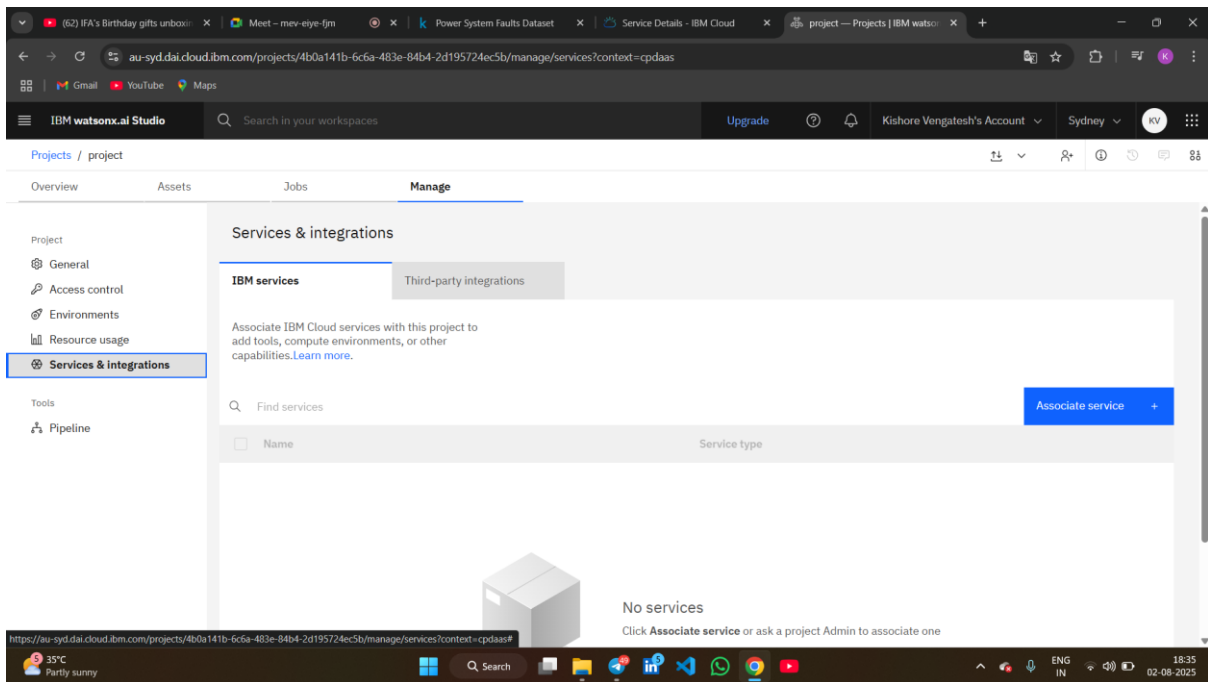


Step 8: Click on “**Build an Machine Learning Model** ” and add your data to train the model.

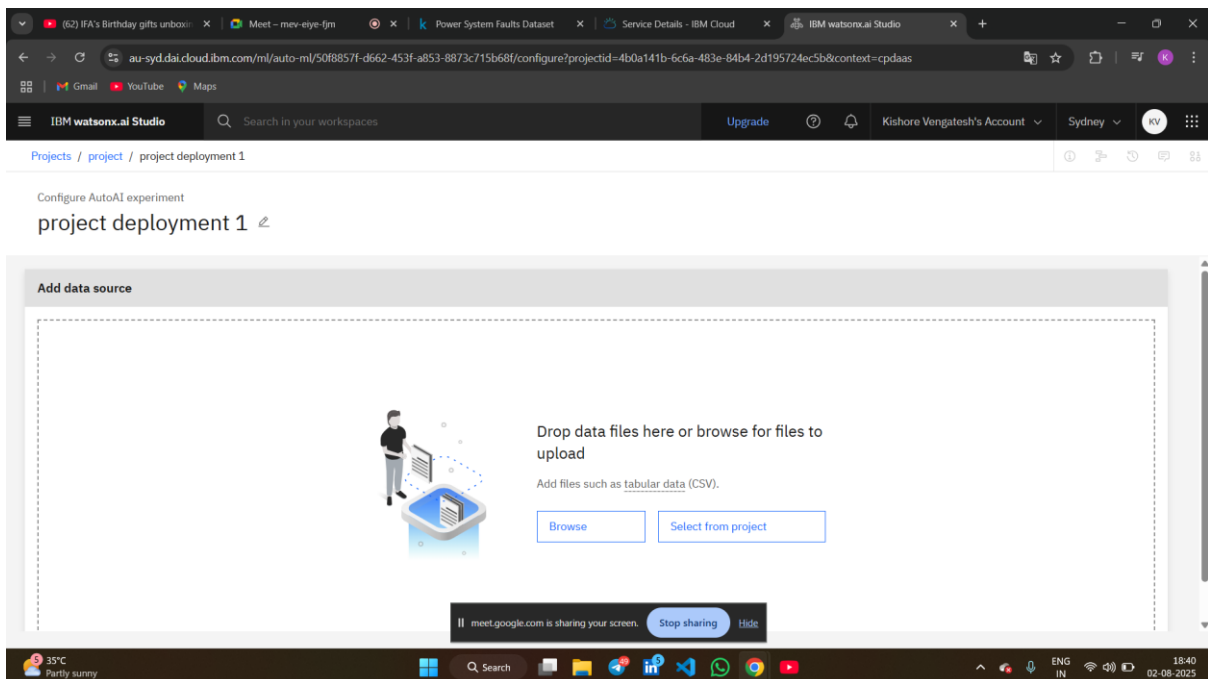


Step 9: Add the DataSet You want to predict.

Step 10: Click on the Promote to Space and also add the Deployment Space.



Step 11: Identify a MultiClass Classification Row and make that Column to Train a model.



Step 13: Click on Run Experiment to Run a model and take the algorithm which gives the highest accuracy among the models.

IBM watsonx.ai Studio

Projects / project / project deployment 1

Experiment summary Pipeline comparison

★ Rank by: Accuracy (Optimized) | Cross validation score

fault_data.csv

View log Save code

Pipeline leaderboard

Rank	Name	Algorithm	Specialization	Accuracy (Optimized) Cross Validation	Enhancements	Build time
1	Pipeline 9	Batched Tree Ensemble Classifier (Random Forest Classifier)	INCR	0.409	HPO-1 FE HPO-2 BATCH	00:01:34
2	Pipeline 8	Random Forest Classifier		0.409	HPO-1 FE HPO-2	00:01:31
3	Pipeline 4	Snap Logistic Regression		0.393	HPO-1 FE HPO-2	00:00:24
4	Pipeline 3	Snap Logistic Regression		0.393	HPO-1 FE	00:00:21

Step 14: After running Experiment, see the Flow of Running of ML Model.

IBM watsonx.ai Studio

Projects / project / project deployment 1

Experiment summary Pipeline comparison

★ Rank by: Accuracy (Optimized) | Cross validation score

Progress map

Prediction column: Fault Type

Relationship map

Swap view

Experiment completed

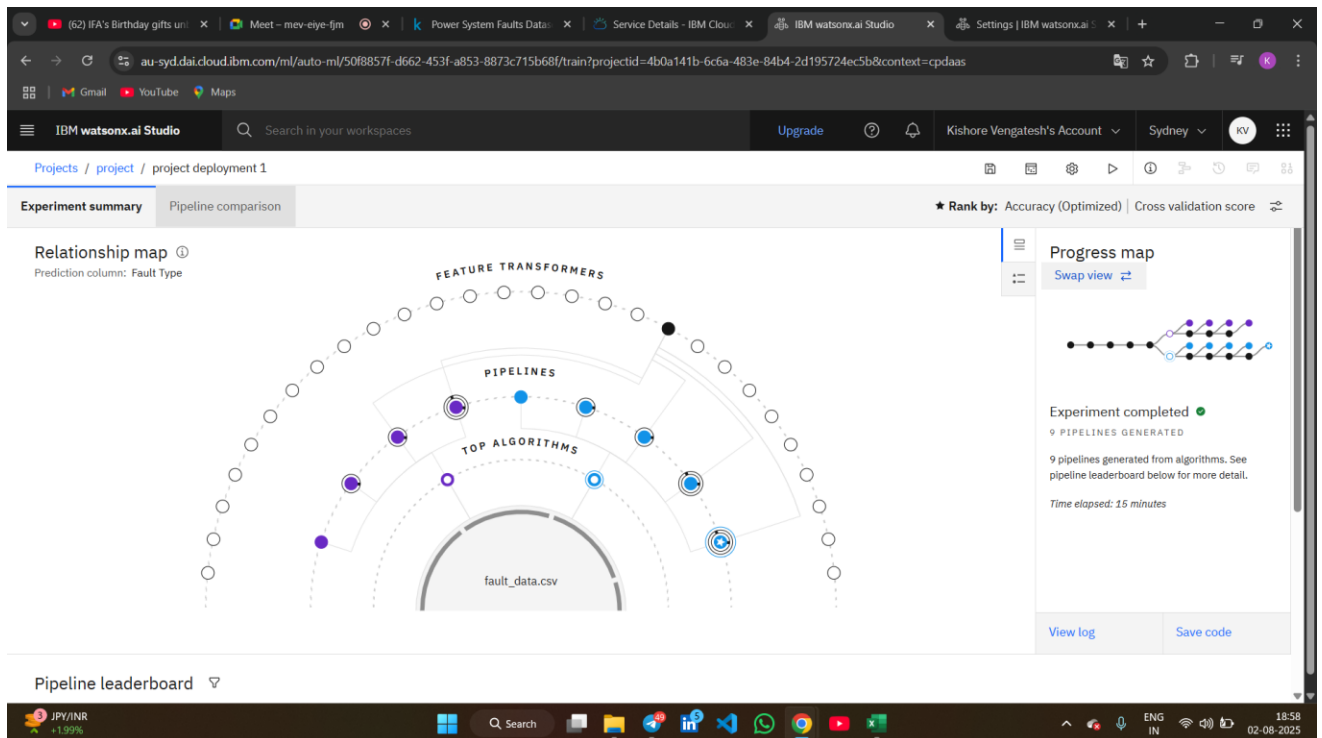
9 PIPELINES GENERATED

9 pipelines generated from algorithms. See pipeline leaderboard below for more detail.

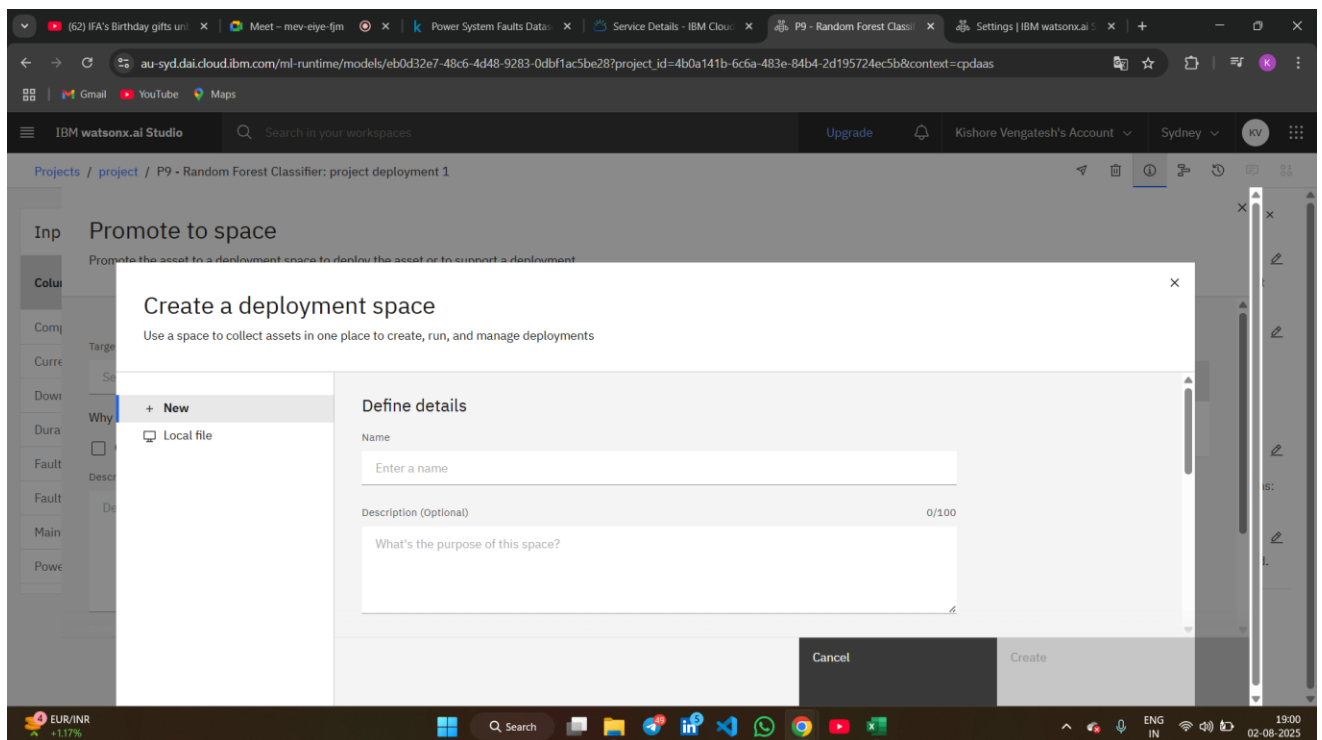
Time elapsed: 15 minutes

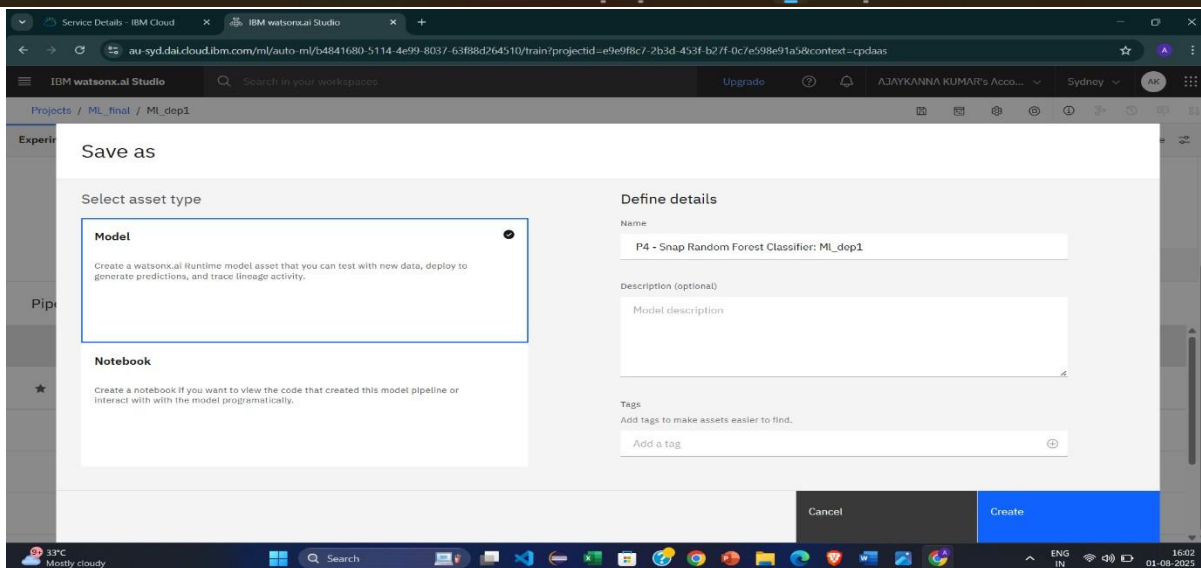
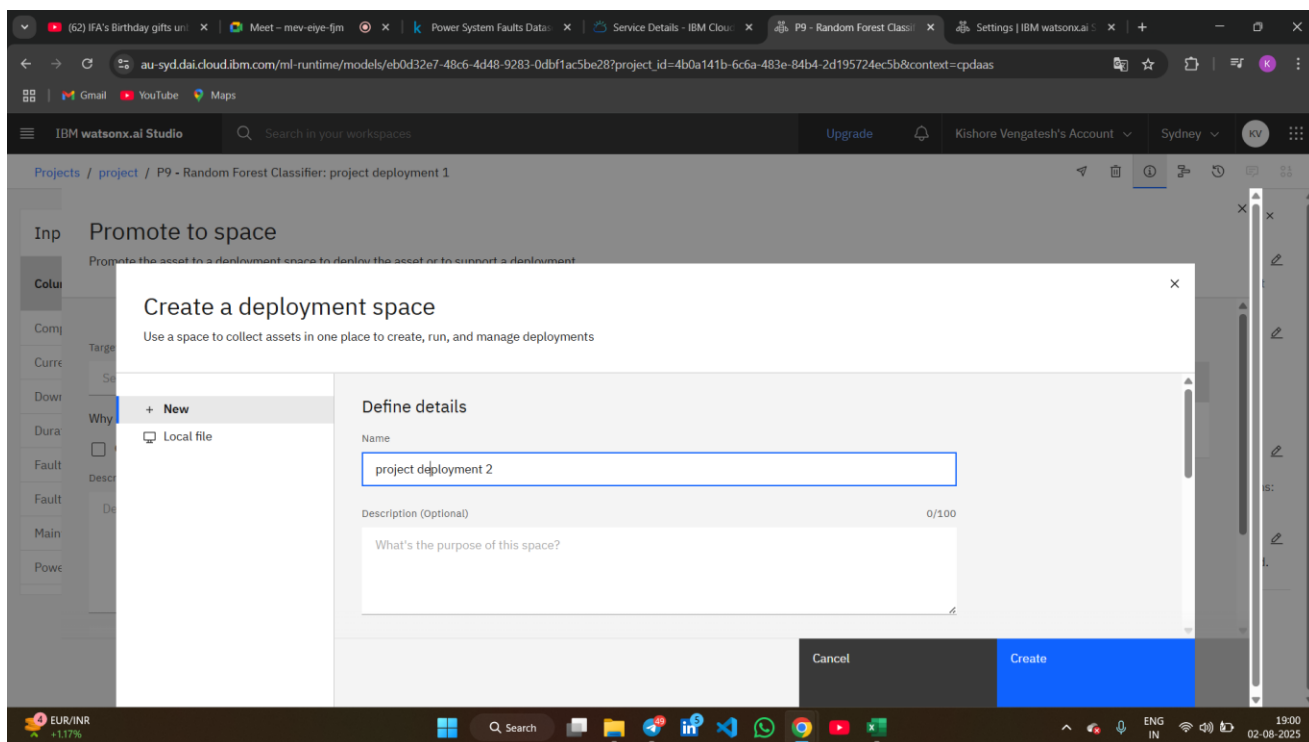
View log Save code

Pipeline leaderboard

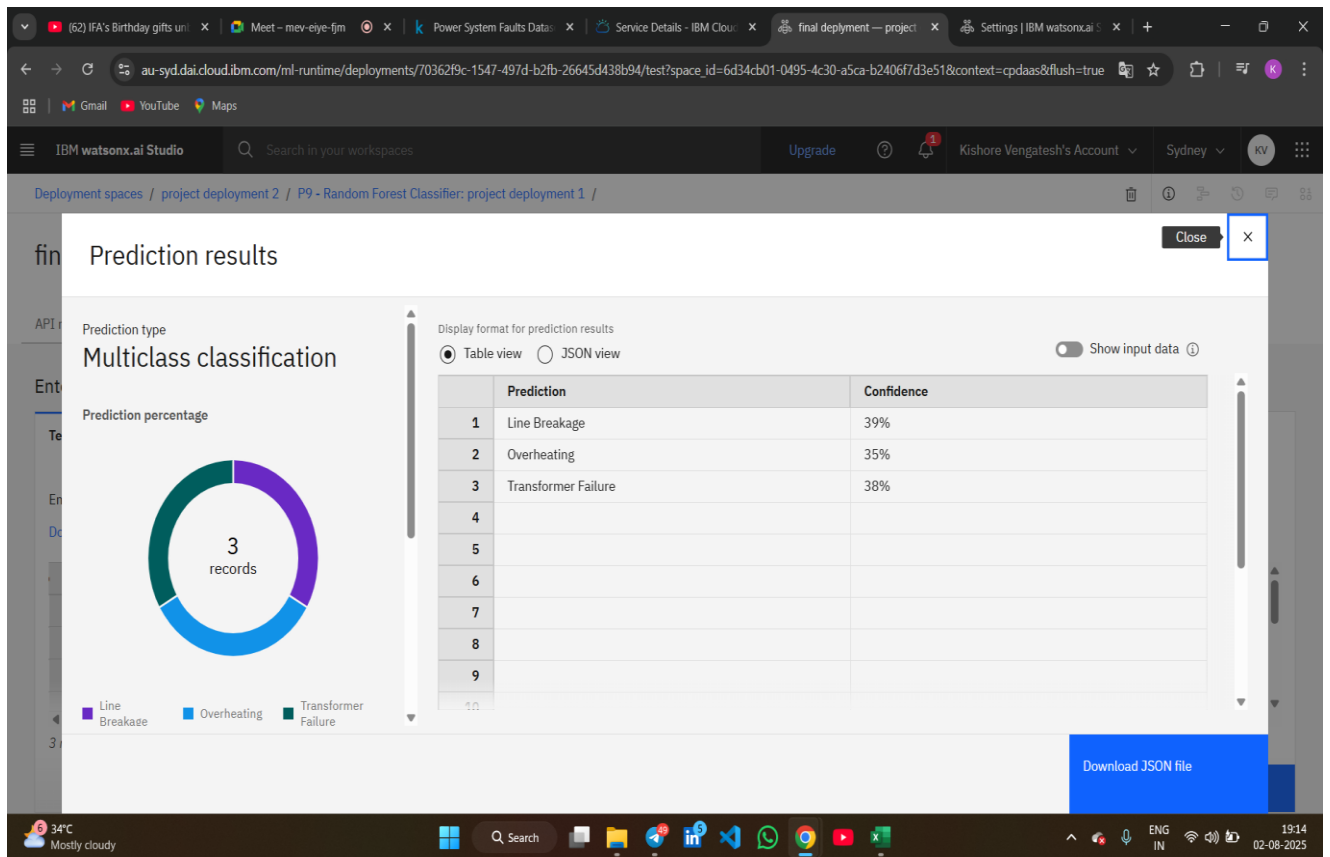


Step15: Click on Save button and name the model and Click on create.





Step 16: Give our Inputs and predict the Results from our trained data.



Based on the Results, we can take our decision on the Confidence meter.

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