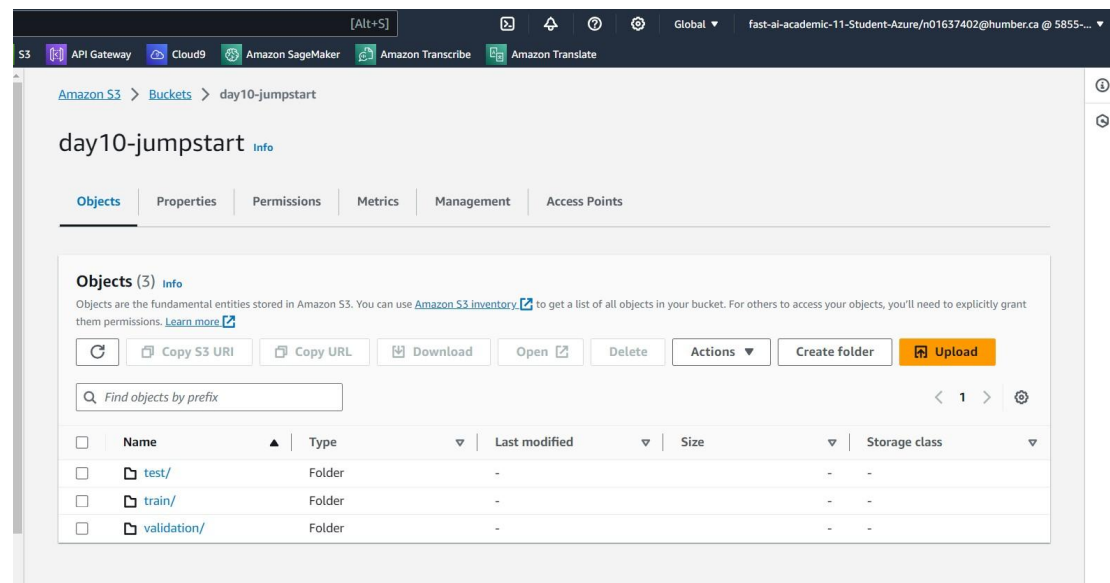
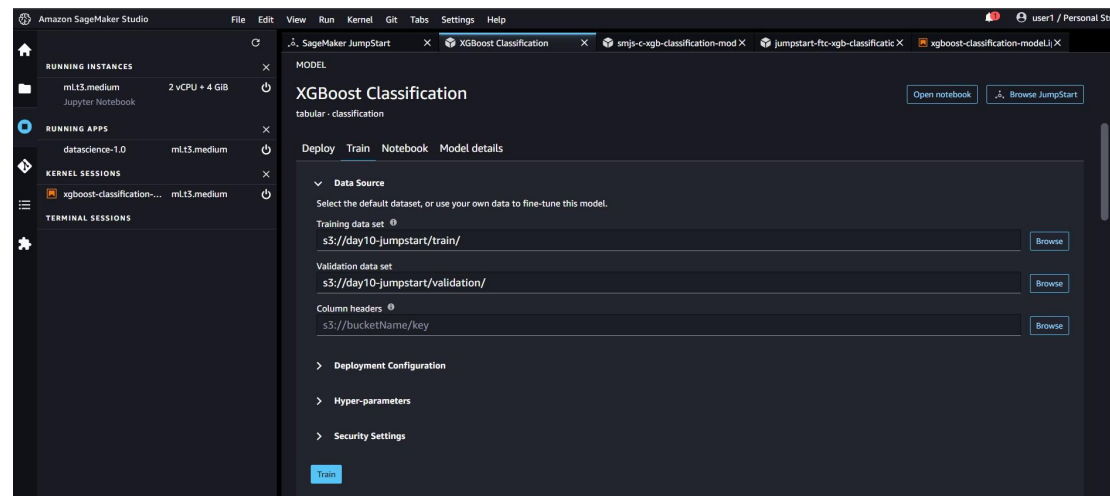


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1. Upload train, validation and test data.



2. Select XGBoost Classification algorithm, select train and validation dataset, select IAM role and then train.



3. Training status.

The screenshot displays the Amazon SageMaker Studio interface. On the left sidebar, under 'RUNNING INSTANCES', a 'ml.t3.medium' instance is shown. The main panel is titled 'TRAINING JOB' and shows the job name 'smjs-c-xgb-classification-model-20231205-042857'. Below this, the 'Training status' tab is active, showing a 'Complete' status with a green checkmark. The training job details table is as follows:

validation.auc	train.auc	Time stamp
0.818	0.897	16 seconds ago

The 'Training Status' section indicates the job is 'Complete' and provides instructions on how to access the model. Below this, the 'Training job details' table is shown:

Base model	XGBoost Classification
Model task	classification
Training job name	smjs-c-xgb-classification-model-20231205-042857
Training job arn	arn:aws:sagemaker:us-east-1:585522057818:training-job/smjs-c-xgb-classification-model-20231205-042857
Training time	~4 minutes
Output path	s3://sagemaker-us-east-1-585522057818/smjs-c-xgb-classification-model-20231205-042857/output/model.tar.gz

Below the SageMaker Studio interface, the 'Amazon SageMaker > Models' console is shown. It displays a table of models with the following data:

Name	ARN	Creation time
xgboost-classification-model-20231205-043525	arn:aws:sagemaker:us-east-1:585522057818:model/xgboost-classification-model-20231205-043525	12/4/2023, 11:35:29 PM

4. Then deploy the model.

The screenshot displays the Amazon SageMaker Studio interface. On the left sidebar, under 'RUNNING INSTANCES', a 'ml.t3.medium' instance is shown. The main panel is titled 'MODEL ENDPOINT' and shows the endpoint name 'jumpstart-rtc-xgb-classification-model'. Below this, the 'Endpoint Status' tab is active, showing an 'In Service' status with a green checkmark. The endpoint details table is as follows:

Base model	XGBoost Classification
Model task	classification
Endpoint source	not available
Endpoint arn	arn:aws:sagemaker:us-east-1:585522057818:endpoint/jumpstart-rtc-xgb-classification-model
Endpoint name	jumpstart-rtc-xgb-classification-model
Instance	ml.m5.xlarge
Number of instances	1
Model data location	s3://sagemaker-us-east-1-585522057818/xgboost-classification-model-20231205-043525/model.tar.gz

Below the SageMaker Studio interface, the 'Amazon SageMaker > Endpoint configuration' console is shown. It displays a table of endpoint configurations with the following data:

Name	ARN	Creation time	Status	Last updated
jumpstart-rtc-xgb-classification-model	arn:aws:sagemaker:us-east-1:585522057818:endpoint-config/jumpstart-rtc-xgb-classification-model	12/4/2023, 11:35:30 PM	InService	12/4/2023, 11:38:11 PM

5. Evaluation metrics.

```
[8]: # Measure the prediction results quantitatively.
eval_accuracy = accuracy_score(ground_truth_label.values, predict_label)
eval_f1_macro = f1_score(ground_truth_label.values, predict_label, average="macro")
eval_f1_micro = f1_score(ground_truth_label.values, predict_label, average="micro")

print (
    f"{bold}Evaluation result on test data{unbold}:{newline}"
    f"{bold}{accuracy_score.__name__}{unbold}: {eval_accuracy}{newline}"
    f"{bold}F1 Macro{unbold}: {eval_f1_macro}{newline}"
    f"{bold}F1 Micro{unbold}: {eval_f1_micro}{newline}"
)

Evaluation result on test data:
accuracy_score: 0.9317269076305221
F1 Macro: 0.7233656977386307
F1 Micro: 0.9317269076305221
```