

Cloud and API deployment

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Data Glacier

- **Selecting the Dataset**

California Housing data:

	MedInc	HouseAge	AveRooms	AveBedrms	Population	AveOccup	Latitude	Longitude	MedHouseVal
0	8.3252	41.0	6.984127	1.023810	322.0	2.555556	37.88	-122.23	4.526
1	8.3014	21.0	6.238137	0.971880	2401.0	2.109842	37.86	-122.22	3.585
2	7.2574	52.0	8.288136	1.073446	496.0	2.802260	37.85	-122.24	3.521
3	5.6431	52.0	5.817352	1.073059	558.0	2.547945	37.85	-122.25	3.413
4	3.8462	52.0	6.281853	1.081081	565.0	2.181467	37.85	-122.25	3.422

- **Training the Model**

```
from sklearn.datasets import fetch_california_housing
from sklearn.model_selection import train_test_split
from sklearn.ensemble import GradientBoostingRegressor
import joblib

# train the model
housing = fetch_california_housing()
X_train, X_test, y_train, y_test = train_test_split(
    housing.data, housing.target, test_size=0.2, random_state=42
)
model = GradientBoostingRegressor(
    n_estimators=100, learning_rate=0.1, max_depth=3, random_state=42
)
model.fit(X_train, y_train)
```

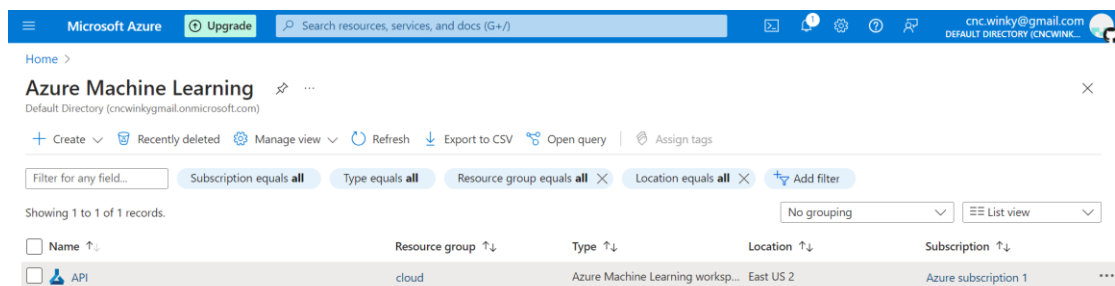
- **Saving the Model**

```
joblib.dump(model, "model.pkl")
```

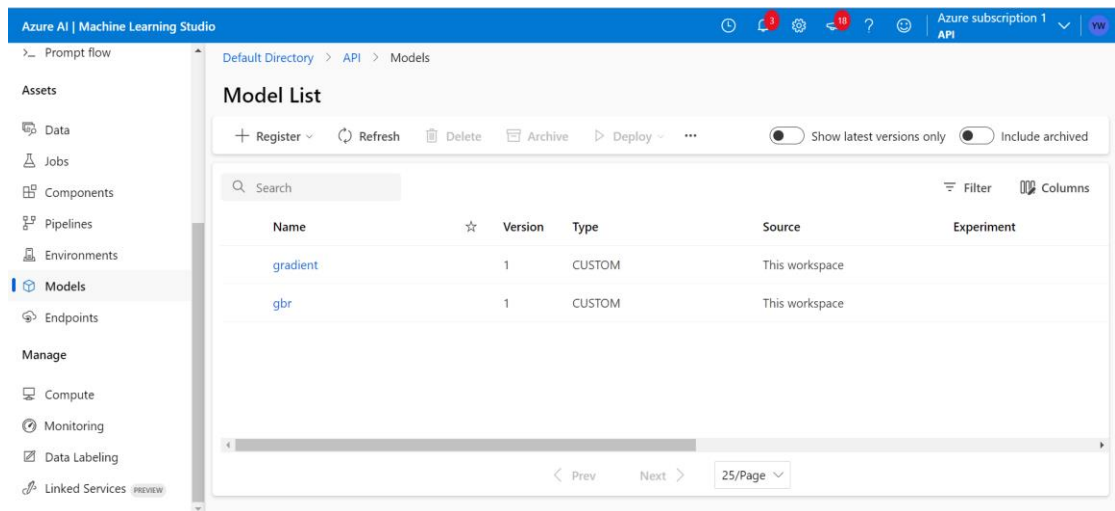
```
from flask import Flask, request, jsonify
import joblib
```

```
app = Flask(__name__)
model = joblib.load("model.pkl")
```

- Set up Azure Machine Learning Workspace



- Upload Model to Azure



- Deploy model as a web service

