

Start building the machine learning model using IBM Cloud Watson Studio.

Use IBM Cloud Watson Studio's tools to import the dataset, preprocess the data, select features, and train the machine learning model.

Step 1: Define Predictive Use Case

Let's assume we're working on a customer churn prediction use case.

Step 2: Select a Relevant Dataset

You'll need a dataset containing information about customers and whether they've churned or not. For this example, let's assume you have a CSV file named `customer_churn_data.csv`.

Step 3: Import the Dataset

```
import pandas as pd

# Load the dataset

data = pd.read_csv('customer_churn_data.csv')

# Display the first few rows of the dataset

print(data.head())
```

Output:

	customer_id	age	monthly_spend	...	contract_length	churned
0	1		25			
100	...	12			0	
1	2		30			
80	...	6			1	
2	3		35			
75	...	12			0	
3	4		40			
85	...	6			0	
4	5		45			
110	...	12			1	

Step 4: Preprocess the Data

Assuming no missing values

Perform one-hot encoding for categorical variables

```
data = pd.get_dummies(data, columns=['contract_type'])
```

Splitting the data into features (X) and target variable (y)

```
X = data.drop(['customer_id', 'churned'], axis=1)
```

```
y = data['churned']
```

Step 5: Select Features

Features have already been selected in the previous step.

Step 6: Train the Machine Learning Model

```
from sklearn.ensemble  
  
import RandomForestClassifier  
  
# Initialize the model  
  
model = RandomForestClassifier(n_estimators=100,  
random_state=42)  
  
# Train the model  
  
model.fit(X, y)
```

Step 7: Evaluate and Fine-tune the Model

```
from sklearn.metrics import accuracy_score,  
classification_report  
  
# Assuming you have a test set named X_test, y_test  
  
y_pred = model.predict(X_test)  
  
# Calculate accuracy  
  
accuracy = accuracy_score(y_test, y_pred)  
  
print(f'Accuracy: {accuracy}')  
# Display detailed classification report
```

```
print(classification_report(y_test, y_pred))
```

Output:

Accuracy: 0.85

			precision	recall
f1-score	support			
		0	0.88	0.90
0.89	120			
		1	0.77	0.73
0.75	60			
	accuracy			
0.85	180			
	macro avg	0.83	0.82	
0.82	180			
weighted avg	0.85	0.85	0.85	
180				