DIG DEEP WITH

AZURE MACHINE LEARNING

Use data analysis to take your business to a whole new level.

Microsoft Azure Machine Learning simplifies data analysis and empowers you to find the answers your business needs.

The question isn't whether you can find the answers. *The question is how.*

So, what do you want to find out?

I WANT TO:

Predict Values

Regression
Forecast the future by estimating the relationship between variables.

- Estimate product demand
- Predict sales figures
- Analyze marketing returns

Find Unusual Occurrences

Anomaly Detection
Identify and predict rare or unusual data points.

- Predict credit risk
- Detect fraud
- Catch abnormal equipment readings

Discover Structure

Clustering
Separate similar data points into intuitive groups.

- Perform customer segmentation
- Predict customer tastes
- Determine market price

Predict Categories

Classification
Identify what category new information belongs in.

Predict Between Two Categories

Two-Class Classification

Answers simple two-choice questions, like yes-or-no, true-or-false.

- Is this tweet positive?
- Will this customer renew their service?
- Which of two coupons draws more customers? A/B

Predict Between Several Categories

Multi-Class Classification

Answers complex questions with multiple possible answers.

- What is the mood of this tweet?
- Which service will this customer choose?
- A/B/C Which of several promotions draws more customers?

Azure Machine Learning works by teaching the software to find patterns in the current data so that it can seek out the patterns in future data.

Let's say you rent cars.

How can you accurately predict demand for your product?

FOR THAT YOU NEED REGRESSION ANALYSIS

STEP 01
Get the data.
Car rental could spike depending on time of day, holidays, weather, etc.

STEP 02
Prepare the data.
Clean data, combine datasets, and prepare it for analysis.

STEP 03
Train the model.
Feed the information into the machine to teach it what to expect.

STEP 04
Score and evaluate the model.
Test the model's ability to predict the original data, and evaluate its success.

STEP 05
Predict future demand.
Use the model to forecast future spikes and shortfalls in demand.

Find out how to do this and more with #AzureML.
Visit us at https://studio.azureml.net/

ALGORITHM MODULE OPTIONS

Regression

Ordinal Regression
Data in rank ordered categories
Example >

Poisson Regression
Predicts event counts
Example >

Fast forest quantile regression
Predicts a distribution
Example >

Linear Regression
Fast training, linear model
Example >

Bayesian Linear Regression
Linear model, small data sets
Example >

Neural Network Regression
Accurate, long training times
Example >

Decision Forest Regression
Accurate, fast training times
Example >

Boosted Decision Tree Regression
Accurate, fast training times, large memory footprint
Example >

Anomaly Detection

One Class SVM
Under 100 features, aggressive boundary
Example >

PCA-Based Anomaly Detection
Fast training times
Example >

Clustering

K-Means
Unsupervised learning
Example >

Two-Class Classification

Two-class SVM
Under 100 features, linear model
Example >

Two-class averaged perceptron
Fast training, linear model
Example >

Two-class Bayes point machine
Fast training, linear model
Example >

Two-class decision forest
Accurate, fast training
Example >

Two-class logistic regression
Fast training, linear model
Example >

Two-class boosted decision tree
Accurate, fast training, large memory footprint
Example >

Two-class decision jungle
Accurate, small memory footprint
Example >

Two-class locally deep SVM
Under 100 features
Example >

Two-class neural network
Accurate, long training times
Example >

Multiclass Classification

Multiclass logistic regression
Fast training times, linear model
Example >

Multiclass neural network
Accuracy, long training times
Example >

Multiclass decision forest
Accuracy, fast training times
Example >

Multiclass decision jungle
Accuracy, small memory footprint
Example >

One-v-all multiclass
Depends on the two-class classifier
Example >