



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:

### Regression

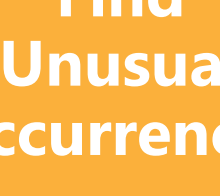
Forecast the future by estimating the relationship between variables.



Estimate product demand

Predict sales figures

Analyze marketing returns



### Find Unusual Occurrences

Identify and predict rare or unusual data points.

Predict credit risk

Detect fraud

Catch abnormal equipment readings



### Discover Structure

Separate similar data points into intuitive groups.

Perform customer segmentation

Predict customer tastes

Determine market price



### Predict Categories

Identify what category new information belongs in.

### Classification



### 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?



### 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?

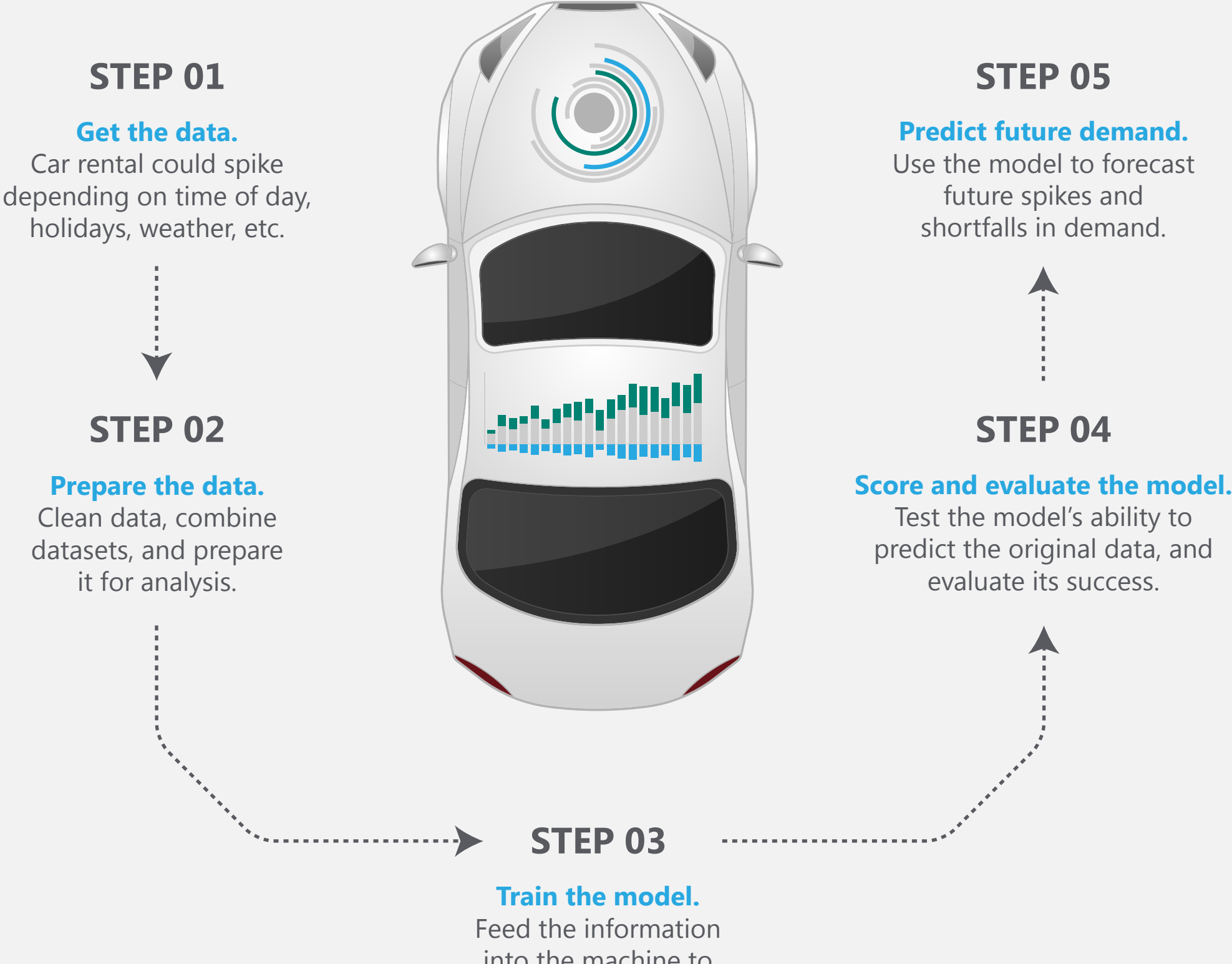
Which of several promotions draws more customers?

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.

## For example, let's say you rent cars.

### How can you accurately predict demand for your product?

FOR THAT YOU NEED REGRESSION ANALYSIS



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

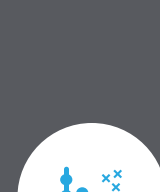


**K-Means**

Unsupervised learning

Example >

### Two-Class Classification



**Two-class SVM**

Under 100 features, linear model

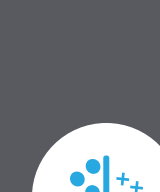
Example >



**Two-class averaged perceptron**

Fast training, linear model

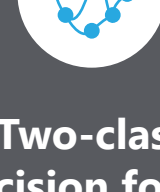
Example >



**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

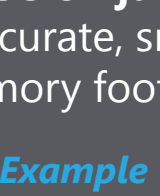
Example >



**Two-class boosted decision tree**

Accurate, fast training, large memory footprint

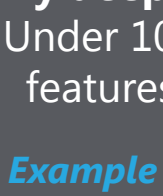
Example >



**Two-class decision jungle**

Accurate, small memory footprint

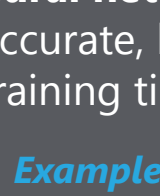
Example >



**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

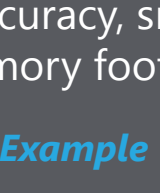
Example >



**Multiclass decision forest**

Accuracy, fast training times

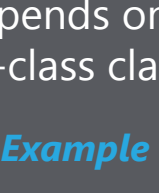
Example >



**Multiclass decision jungle**

Accuracy, small memory footprint

Example >



**One-v-all multiclass**

Depends on the two-class classifier

Example >

