



2018

Global **Azure**
BOOTCAMP

- Azure Machine Learning Labs with Ninja Niels



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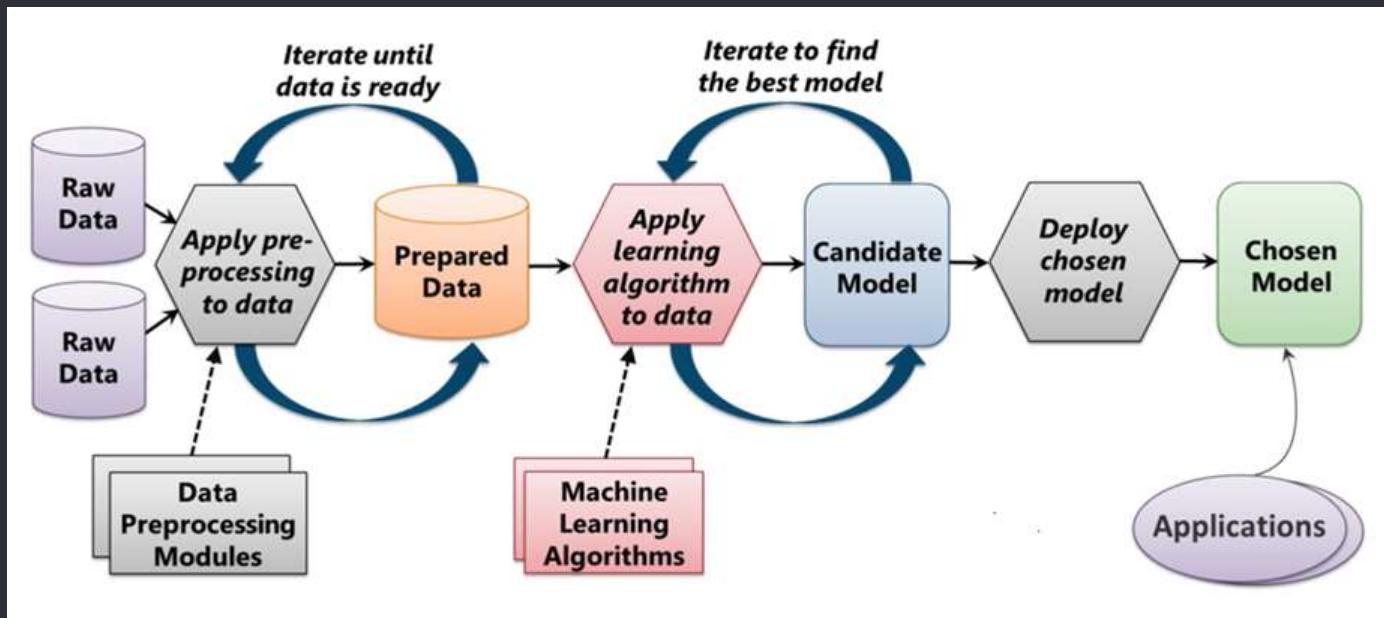
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What is Machine Learning?

- Branch of computer science in which a computer "learns" from data in order to perform predictive analytics
 - Credit-card fraud detection
 - Online shopping recommendations
 - Self-driving cars and more
- Supervised learning
 - Model is trained -> predict outcome
 - Regression and classification
- Unsupervised learning
 - Finding relationships in a dataset
 - Clustering



The Machine Learning Process



From "Introduction to Microsoft Azure" by David Chappell

Azure Machine Learning

- Fully managed cloud service for building and operationalizing ML models
- Azure Machine Learning Studio



Fully managed

No software to install, no hardware to manage, and one portal to view and update.

Integrated

Simple drag, drop and connect interface for Data Science. No need for programming for common tasks.

Best in Class Algorithms + R

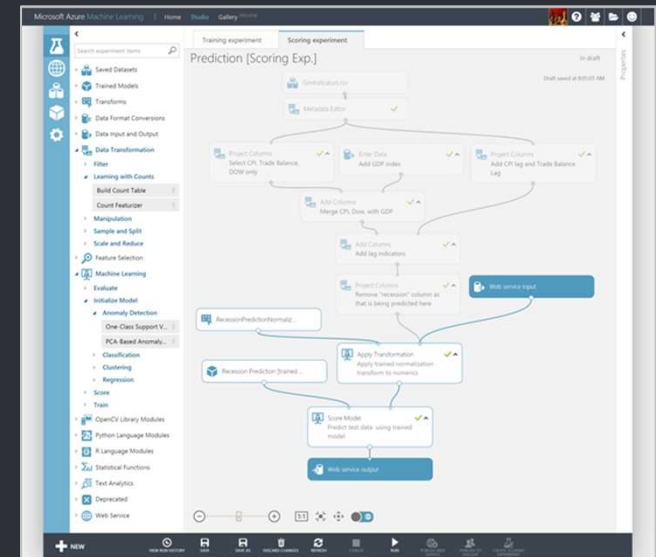
Built-in collection of best of breed algorithms. Support for R and popular CRAN packages.

Deploy in minutes

Operationalize models with a single click. Monetize in Machine Learning Marketplace.

Azure Machine Learning Studio

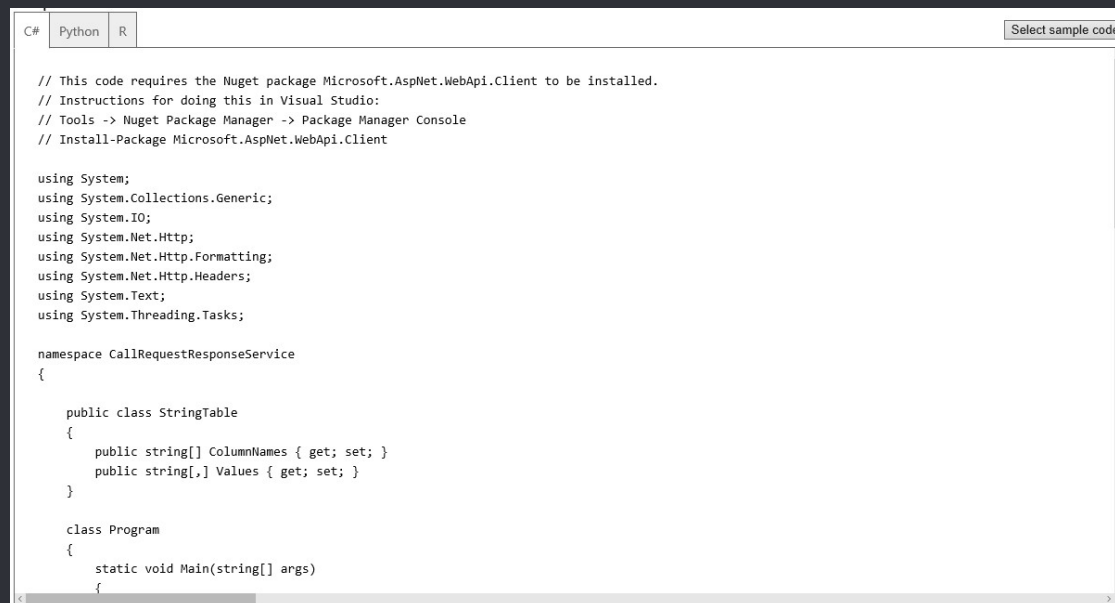
- Visual editor for composing, testing, refining, and deploying machine-learning models
 - Includes hundreds of modules
 - Includes common algorithms for classification, regression, and more
 - Supports numerous input formats
 - Supports R and Python
- Machine learning for the masses



- Demo/Lab

Deploying as a Web Service

- A button click in ML Studio deploys a model as a Web service and provides sample code for calling it in three languages



```
C# Python R Select sample code
// This code requires the Nuget package Microsoft.AspNet.WebApi.Client to be installed.
// Instructions for doing this in Visual Studio:
// Tools -> Nuget Package Manager -> Package Manager Console
// Install-Package Microsoft.AspNet.WebApi.Client

using System;
using System.Collections.Generic;
using System.IO;
using System.Net.Http;
using System.Net.Http.Formatting;
using System.Net.Http.Headers;
using System.Text;
using System.Threading.Tasks;

namespace CallRequestResponseService
{
    public class StringTable
    {
        public string[] ColumnNames { get; set; }
        public string[,] Values { get; set; }
    }

    class Program
    {
        static void Main(string[] args)
        {
```

Thanks!

ANY QUESTIONS?

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