.netda

.NET Developers Association – Westside

Sponsored by Parametric, fintech in seattle.

6 internships opening up.

Sponsored by aim consulting.

IDE Microsoft Visual Studio 2017

Core services engineer networking management

dotNETda.org

@NETDA

Next month,

Getting Started with Octopus Deploy by Chris Mckenzie

Add AI

By Ilango Somasundaram and Naraen Radapuram

From aim consulting

Areas of expertise

Application development

Data & analytics

Delivery leadership

By 2020, 1.7MB/sec new information will be created on average. Opens up possibilities.

Entry into machine learning is daunting

If you are a Microsoft developer, the Microsoft toolset lowers the barrier.

DotNetFlix

ASP.NET Core MVC backend

AngularJS application

https://github.com/aimconsulting

dotnetflix

simple app

movie portal

website omdbapi.com

open-source

open movie database

example code

5 movie, 5 movie ID

getID gets more details

**Cortana Intelligence Suite: Transform data into action**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Information management** | **Big data stores** | **Machine learning and analytics** | **Intelligence** |  |
| **Data sources** | Data factory | Data lake store | Machine learning | Cognitive services | **People** |
| **Apps** | Data catalog | SQL data warehouse | Data lake analytics | Bot framework | **Apps** |
|  | Event hubs |  | HDInsight | Cortana |  |
| **Sensors and devices** |  |  | Stream analytics | **Dashboards & Visualization** | **Automated systems** |
|  |  |  |  | Power BI |  |
| **Data** | **-------->** | **Intelligence** | | **------->** | **Actions** |

ML Studio

Can handle any data, structured or unstructured.

Read BLOB, Table, or Text Data

Hive, SQL, Azure, or Windows Azure Tables

Unlimited extensibility: Python Script Module, R Script Module, Custom Module, Jupyter Notebook

Website: Microsoft Azure Machine Learning Studio

Can input the R model

Data science project needs 4 types of people: business stakeholder, business data analyst, software developer. Roles are morphing: data scientist (works on algorithms/model), data engineer (right datasets, cleaning the model).

It’s a machine, junk in, junk out.

So get the right data to train the model

Azure ML Capabilities Overview

Process of training experiment:

Import data - > Preprocess - > Split Data. Split data + Built-in ML algorithm - > train model -> score model.

Training the model

Has tendencies to predict false positive

More data better prediction

Workflow design

Cross browser drag and drop ML workflow designer

Zero installation

Characteristics for a valid experiment

The experiment has at least one dataset or module

Datasets may be connected only to modules

In Azure website

You can publish trained models.

Datasets can be .csv

A lot of prebuilt projects

Process:

Import data, properties, azure data blob to store data.

Right click imported data - > visualize

Edit metadata

Drag and drop to connect

Join data

Automatically picks the primary keys

Showed in the properties tab

Select columns

Don’t include irrelevant columns

Remove duplicates

Split data

Train model

Score matchbox recommender – can have multiples if dataset is spread

Evaluate each recommender

Can right click to publish model

After RUN, will be published as web service

Then go predictive tab

Look at **Azure AI Gallery**

Search by industry

Can use a model that is already been trained

Interesting AI model: **Predictive** **Maintenance**

3 popular algorithms

Linear regression: analysis

Decision forest regression: sales forecasting, predicative maintenance

Boosted decision tree: stock market analyzer

If model for forecasting, need to add additional data input points.

Publish Web Service

API URL

API Key

Explore the service interface

Sample request/response

Using Postman

Looking at Azure flow as an App developer

Search Azure ML Studio

Train the model = mathematical equation, picking weights and coefficient

Different genre of movie, different weights and coefficient

Movie lists, ratings, users.

80-20 split

80% of data, put the data to train.

Take the model and run it against the 20% for predictions.

Check recall, for overfit

Trained to much on the same dataset

Over-trained. Model is garbage.

Request/response gives you documentation

Sends to Postman if its working or not

In Postman,

Post

Paste API

Authorize yourself with the API key in header tab

Set authorize - > API key

Put API in token (without http)

Set content type - > application/json

Paste documentation code in Postman body

Running the postman will run the code against the azure model

Warning: dataset not big enough

What you can do in Azure

Can set up programmatically

If update dataset to Azure

Run from the first step to retrain the model

Users will have a different recommendation

Dataset serialization

Coursera – ML?

Luis AI (Language Understanding Intelligent Service)

Contains Cortana speech data

Luis is using Azure ML models