Microsoft

CORTANA INTELLIGENCE SUITE – PREDICTIVE ANALYTICS DEEP DIVE – SOLUTION

TRAINING OVERVIEW

Welcome to the *Predictive Analytics Deep Dive – Solution* course presented by your Microsoft Machine Learning and Data Science Team. This course covers one of Microsoft's "Solutions", which are quickly deployable architectures for common use cases. The solutions can then be modified to fit a particular business scenario. Participants in this course will explore various components of the Cortana Intelligence Suite via the Energy Demand Forecasting Solution. The solution involves predictive modeling on real-time data. The class contains numerous hands-on labs that provide direction and avenues for further exploration.

AUDIENCE

This training is intended for developers, data scientists, database professionals, managers and operations folks looking to quickly implement IoT solutions using the Cortana Intelligence Suite.

PREREQUISITES

There are a few things you need prior to coming to class:

- Some familiarity with products in the Cortana Intelligence Suite (PowerBI, Azure ML, Blob Storage)
- A subscription to Microsoft Azure (this may be provided through your company or as part of your invitation – you **must** have this enabled *prior to class* – you will be using Azure throughout the course, for all labs, work and exercises)
    - You can use your MSDN subscription – https://azure.microsoft.com/en-us/pricing/member-offers/msdn-benefits/
    - Your employer may provide Azure resources to you, but make sure you check to see if you can deploy assets and that they know you'll be using their subscription in the class.
    - Optionally, you may receive instructions in your class invitation.
- Your workstation should have the following Software Installed (or you can use a Data Science Virtual Machine):

- Visual Studio installed – the Community Edition (free) is acceptable – Version 2015 preferable (https://www.visualstudio.com/en-us/products/visual-studio-community-vs.aspx)
- Azure SDK and Command-line Tools installed (https://azure.microsoft.com/en-us/downloads/)
- Power BI Desktop Installed (https://powerbi.microsoft.com/en-us/desktop/)A background in data technologies, such as working with Relational and Non-Relational data processing systems
- Azure PowerShell SDK
- Azure PowerShell ISE

It's also a good idea to have a general level of predictive and classification Statistics, and a basic understanding of Machine Learning.

SYLLABUS

This course is intended to be completed in a single day. There are extra resources for extended study if a student so desires.

Here is an overview of the class schedule:

- Prior to 8:30 – Prepare for class, setup laptops, meet others
- **8:30 – Class Starts**
- Welcome, overview, logistics
- *Group Exercise – Understand the Problem*
- Cortana Intelligence and Solutions
- *Lab 1 – Deploy the Solution*
- **10:00(approx.) – Break**
- Understanding data
- *Lab 2 – Creating the data, Web Jobs*
- Real-time data
- *Lab 3 – Collecting Steaming Data, Event Hubs and Stream Analytics*
- **12:00 – Break for Lunch**
- **1:00 – Class resumes**
- Creating Effective Reports
- *Lab 4 – Reporting the Results, Power BI*
- Machine Learning 101
- *Lab 5 – Exploring Data, Azure ML*
- **3:00(approx.) – Break**
- Machine Learning Algorithms
- *Lab 6 – Creating Machine Learning Models, Azure ML*
- Data Orchestration
- *Demo – Orchestrating your data flow, Azure Data Factory*

- Course review, closing thoughts, questions
- **5:00 – Class finishes**
- Post 5:00 – Further questions with instructor, pack up laptops

Technologies Covered

- Web Jobs
- Azure Data Factory
- Azure SQL Database
- Event Hubs
- Steam Analytics
- Azure ML
- Power BI