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Learning Style: On Demand

Technology: Microsoft

Difficulty: Intermediate

Course Duration: 12 Hours

Predictive Analytics for IoT Solutions

About this course:

This course is affiliated with and is part of Microsoft Professional Program Certificate in IoT.

Do you wish to learn about your IoT data? Do you want to gain a deeper comprehension of this data by starting the usage of machine learning?

This course is just the right stop for you. Through this course, you will be able to have the opportunity of learning through practical demonstration exercises. These exercises will give you a hands-on lab experience in learning about implementing machine learning which will deliver to you an understanding of scenarios which are common in IoT, like predictive maintenance. By completing this course, the students will be capable to incorporate predictive analytics in their work by using their IoT data.

The course is adequately divided in four modules:

- Machine learning for IoT
- Techniques of preparing data
- Modeling for predictive maintenance
- Modeling for predicting faults in the system

Learning Objectives:

The course has the following learning objectives:

- Give description of machine learning scenarios and algorithms which are regularly relevant to IoT
- Describe the method for Predictive Maintenance using the IoT Solutions Accelerator
- Devise data for machine learning operations and analysis
- Integrate the feature engineering technique in the analysis procedure
- Selecting the relevant machine learning algorithms regarding the pertained business scenario
- Pinpoint target variables relevant to the type of the algorithm of machine learning
- Prepare, analyse, and incorporate various regression models in the system
- Assess the effectiveness of regression models
- Integrate deep learning to a predictive maintenance scenario

Audience:

This course is suitable for and designed for IoT engineers and IoT developers

Requirements:

Before beginning the course, the students should make sure that they fulfill the requirements. These include the understanding of IoT terminologies and business

objectives, understanding of modern software development tools, fundamental aspects of Python programming, know-how of fundamental data analytics methods, and general knowledge of machine learning concepts.

Course Outline:

Intro Machine Learning for IoT

- Intro
- Azure Machine Learning Overview
- Code-First ML with Python
- Module 1 Assessments

Data Preparation for Predictive Maintenance Modeling

- Explore IoT Data with Python
- Clean and Standardize IoT Data
- Advanced Data Exploration Techniques
- Module 2 Assessments

Feature Engineering for Predictive Maintenance Modeling

- Feature Engineering Overview
- Feature Selection
- Module 3 Assessments

Train Model for Fault Prediction

- Train Predictive Model
- Analyze Model Performance
- Module 4 Assessments

Final Evaluation

- Final Assessments

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