Faysal Aziz

Machine Learning and Predictive Modeling

4-Day Training Program

FA-0296 · 4-Day

Software Development · Data & Analytics

Introduction

Welcome to our comprehensive 4-day training program designed to empower you with the skills and knowledge required for leveraging machine learning models in predictive tasks. This program is led by seasoned trainers with over 25 years of development experience, having imparted their knowledge to prestigious organizations such as Intel, Maybank, RHB, and the Malaysian defense. Our trainers are not just educators but industry veterans who will share real development methodologies and deployment techniques, including the use of Linux servers and WSL2. This is not just an academic excursion; it's a dive into the practical, industry-standard applications of AI and ML. This course is crafted to be in sync with today's socio-economic and technological landscape, offering you an unparalleled learning experience.

Training Outcome

By the end of this training, participants will:

1. Understand how to train machine learning models using scikit-learn.

2. Be adept at evaluating and improving model performance.

3. Learn to make predictions on new data using trained models.

4. Gain proficiency in using MATLAB for predictive modelling and machine learning.

5. Acquire skills in machine learning model serving with Django Rest Framework.

6. Explore case studies and datasets focused on poverty.

7. Gain insights into OpenAI's offerings and their application in machine learning.

Prerequisites

Participants should have:

1. Basic knowledge of Python programming.

2. Understanding of fundamental machine learning concepts.

3. Familiarity with basic statistical methods.

4. Basic experience with any programming IDE.

5. PC with a minimum of 16GB RAM and 100GB of free storage.

6. Full administrative access to PC.

7. Hyper-V enabled.

Training outline

1. Python

1. Overview and recap of Python
2. New features of python
3. Library exploration

   Advanced features of python

   1. Advanced Data Structures
   2. Concurrency and Parallelism
   3. Functional Programming
   4. Advanced OOP
   5. Decorators & Metaclasses
   6. Recursion
   7. Memoization

2. Training a Machine Learning Model Using Scikit-learn

1. Introduction to scikit-learn
2. Data Preprocessing Techniques
3. Model Selection and Training
4. Cross-Validation Methods

3. Evaluating and Improving Model Performance

1. Performance Metrics Analysis
2. Overfitting and Underfitting
3. Model Optimization Techniques
4. Ensemble Methods

4. Making Predictions with the Model

1. Data Preparation for Prediction
2. Implementing Predictive Models
3. Real-world Application Scenarios

5. MATLAB for Predictive Modelling and Machine Learning

1. Basics of MATLAB in Machine Learning
2. Advanced Data Analysis Techniques
3. Implementing ML Algorithms in MATLAB

6. Machine Learning Model Serving with Django Rest Framework

1. Introduction to Django Rest Framework
2. Integrating ML Models with Django
3. API Development for Model Serving

7. Case Studies & Datasets on Poverty

1. Analyzing Poverty Datasets
2. Machine Learning Applications in Socio-economic Research
3. Case Study Discussions

8. OpenAI and Machine Learning

1. Overview of OpenAI Tools and Services
2. Practical Applications of OpenAI in ML
3. Future Trends and Innovations

9. Deployment

1. Deploying on a server
2. Integration
3. Security
4. Compatibility

This intensive program is structured to provide you with a holistic and practical understanding of machine learning and its real-world applications. We are excited to guide you on this journey of learning and discovery!

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