HANDS-ON MACHINE LEARNING TRAINING WITH PYTHON

WEEK 1

1.1 AI Overview
1.2 Applications field of AI
1.3 AI Development Strategy
1.4 Controversies over AI and its Future
1.5 Machine Learning Overview
    1.5.1 Machine Learning Definition
    1.5.2 Machine Learning Types
    1.5.3 Machine Learning Processes
    1.5.4 Other key Machine Learning Methods
    1.5.5 Common Machine Learning Algorithms

WEEK 2

2.1 Hands-on training
    2.1.1 The Steps in typical machine learning project
    2.1.2 Learning by fitting a model to data
    2.1.3 Optimizing a cost function
    2.1.4 Handling, cleaning and preparing data
    2.1.5 Selecting and engineering features
    2.1.6 Selecting a model and tuning hyperparameters using cross-validation
    2.1.7 The challenges of Machine Learning, in particular underfitting and overfitting (the bias/variance trade-off)
    2.1.8 Reducing the dimensionality of the training data to fight the “curse of dimensionality”
    2.1.9 Other unsupervised learning techniques, including clustering, density estimation, and anomaly detection

WEEK 3

3. 1 Deep Learning Summary
3.2 Training Rules
3.3 Activation Functions
3.4 Normalizer
3.5 Optimizer
3.6 Types of Neural Networks

3.7 Common Problems

WEEK 4

4.1 Building and Training networks using TensorFlow, Keras and PyTorch
    4.1.1 FeedForward Neural Networks
    4.1.2 Convolutional Neural Networks
    4.1.3 Recurrent Networks
    4.1.4 LSTM
    4.1.5 Transformers
    4.1.6 Generative Adversarial Networks (GAN)
    4.1.7 Reinforcement Learning
4.2 Load and processing large amount of data efficiently
4.3 Training and deploying TensorFlow models at scale