CREDO SYSTEMZ
Simplifying IT

ARTIFICIAL INTELLIGENCE COURSE CONTENT

CHAPTER 1: INTRODUCTION TO AI

- What is Artificial Intelligence
- Types of AI
- Perceptron
- Multi-Layer Perception
- Markov Decision Process
- Logical Agent & First Order Logic
- AL Applications

CHAPTER 2: ARTIFICIAL INTELLIGENCE FUNDAMENTALS

- Application of AI
- History of AI
- Machine Learning
- Fuzzy Logic
- Expert Systems
- Computer Vision

CHAPTER 3: REINFORCEMENT LEARNING AND Q-LEARNING INTUITION

- Q-Learning Introduction
- Reinforcement Learning Concepts
- Marcov Decision Process
- Adding a "Living Penalty"
- Temporal Difference
- Q-Learning Visualization

CHAPTER 4: DEEP Q-LEARNING INTUITION

- Plan of Attack
- Deep Q-Learning Intuition – Learning
- Experience Replay
- Action Selection Policies

CHAPTER 5: CREATING ENVIRONMENT

- Installation of environment for Self Driving Car
- Building AI
- Playing with AI
- Challenge Solutions

CHAPTER 6: DEEP CONVENTIONAL Q-LEARNING INTUITION

- Plan of Attack
- Deep Conventional Q-Learning Intuition
- Eligibility Trace

CHAPTER 7: ARTIFICIAL INTELLIGENCE AND THEIR TECHNOLOGIES

- Human Factors and Evaluation
- Information Retrieval & Visualisation
- Language & Learning Technology
- Vision / Image Processing

CHAPTER 8: ROBOTICS AND ARTIFICIAL INTELLIGENCE

- Introduction
- Difference between Robotics & AI
- Natural Languages Processing (NLP)
- Task of NLP
    - Text Classification
    - Text Matching
    - Phonetic Matching
    - Flexible string Matching
- Natural Language Interfaces
- Active Computer Vision

CHAPTER 9: PERFORMANCE METRICS

- Introduction
- Key Methods for Performance Metrics
- Confusion Matrix Example
- Terms of Confusion Matrix
- Accuracy
- Recall / Sensitivity

CHAPTER 10: NEURAL NETWORKS

- Introduction – Error, Cost & Loss Functions
- Challenges in Gradient
- Gradient Descent
- Techniques to overcome challenges of Mini Batch
- Convolution Layer and Max-Pooling
- Hands-on use cases using RNN, LSTM and GRU