

## Advance Artificial intelligence

### 1. Introduction to Artificial Intelligence (AI)

- What is AI? Applications and Examples of AI
- AI Concepts, Terminology, and Application Areas
- AI: Issues, Concerns and Ethical Considerations
- The Future with AI, and AI in Action

### 2. Getting Started with AI using IBM

- Watson AI Overview
- Watson AI Services

• Watson Assistant
• Watson Discovery
• Watson Studio
• Watson Machine Learning
• Watson Visual Recognition
• Watson Knowledge Catalog
• Watson Knowledge Studio
• Watson OpenScale
• Watson Compare and Comply

- Watson in Action

### 3. Building AI Powered Chatbots Without Programming:

- Module 1 - Introduction to Chatbots
  - What are chatbots?
  - Chatbots are trending
  - Leader in the Industry
  - Lab 1: Create an instance of Watson Assistant
- Module 2: Working with Intents
  - How chatbots work
  - Understanding Intents
  - Lab 2: Create Dialog Skill and Intents
  - Lab 3: Import Intents



- c. Module 3: Working with Entities
  - Understanding Entities
  - Lab 4: Create Entities
  - Lab 5: Import and Export Entities
- d. Module 4: Defining the Dialog
  - Putting it all together
  - Building user-friendly chatbots
  - Lab 6: Implement the Dialog
  - Lab 7: Define Domain-Specific Intents
- e. Module 5: Deploying your Chatbot
  - Deploying to a WordPress site
  - Lab 8: Add a preview and retrieve your credentials
  - Lab 9: Deploy your Chatbot
- f. Module 6: Advanced concepts – Part 1
  - Working with Context Variables and Slots
  - Lab 10: Explore Context Variables
  - Lab 11: Master Slots
- g. Module 7: Advanced concepts – Part 2
  - Understanding Digressions
  - Lab 12: Enable Digressions
  - Lab 13: Get to know the Analytics tab
  - Watson Assistant in the Private Cloud

#### **4. Python for Data Science and AI:**

- a. Module 1 - Python Basics
  - Your first program
  - Types
  - Expressions and Variables
  - String Operations
- b. Module 2 - Python Data Structures
  - Lists and Tuples
  - Sets
  - Dictionaries
- c. Module 3 - Python Programming Fundamentals



- Conditions and Branching
- Loops
- Functions
- Objects and Classes

d. Module 4 - Working with Data in Python

- Reading files with open
- Writing files with open
- Loading data with Pandas
- Working with and Saving data with Pandas
- Numpy

e. Module 5 - Final Project

**5. Building AI Applications with Watson APIs**

MODULE 1: INTRODUCTION TO WATSON DISCOVERY

- Understanding Watson Discovery
- Lab 2: Creating a Discovery Collection
- Integrating Watson Assistant and Watson Discovery

MODULE 2: BUILDING THE CHATBOT

- Lab 3: Creating the client Advisor chatbot
- Lab 4: Adding Discovery to the Chatbot

MODULE 3: GIVING A VOICE TO YOUR CHATBOT

- Voice Options for our Chatbot
- Lab 5: Adding Speech to Text
- Lab 6: Adding Text to Speech

MODULE 4: DEPLOYMENT TO FACEBOOK AND BEYOND

- Understanding Deployment Options
- Lab 7: Deploying to Facebook
- Lab 8: Deploying to Slack

**6. Introduction to Computer vision with cloud and Open CV**

- Introduction to Computer Vision
- Image Classification with IBM Watson
- Custom Classifiers with Watson Visual Recognition
- Image Processing using IBM Watson and Python
- Face Detection and Image Processing using OpenCV and Python
- Project: Building a Web-Based Computer Vision App