

# Machine Learning and AI Workshop

## Overview

Artificial Intelligence (AI) is a field that has a long history but is still constantly and actively growing and changing. In this course, you'll learn the basics of modern AI as well as some of the representative applications of AI. Along the way, we also hope to excite you about the numerous applications and huge possibilities in the field of AI, which continues to expand human capability beyond our imagination.

## Details about the speaker:

The faculties at Diginique TechLabs are from top academic institutions, industries and research institutions. They have year long experience in the industries at the same time had the best education in their field. In fact some of them are pursuing/have pursued masters and doctorate at top notch universities to build their knowledge base.

## Workshop details:

1. Date of the workshop: 15 and 16 February, 2020
2. Duration of workshop: 6 hours : 10:00 am to 5:00 pm. Lunch break: 1:00pm to 2:00pm.
3. Reporting time: 8:30 am. Do carry your college/school ID and ticket details. Failing to do so shall cancel entry to the workshop.
4. Venue: IIT Dharwad (complete address details [here](#))
5. Cost of workshop: Rs. 850 per person. You shall receive a ticket confirmation from us within 24 hours of payment.
6. Certificate of Participation shall be awarded to each participant, provided they attend each session for both days. Failing to do so shall cancel certification.
7. No knowledge prerequisites required, we just want you to be inquisitive.
8. Please carry your laptop and charger ( Preferably fully charged) . We will be providing ports for charging. (If you do not have a laptop we'll team you up, but for a better experience do carry a laptop).
9. Please maintain classroom decorum. All participants are bound to the Code of Conduct attached [here](#).

## **Workshop course content\* :**

### **Session 1**

#### **Introduction Of Artificial Intelligence**

1. Introduction of Artificial Intelligence and Machine Learning.
2. Brief introduction to Machine Learning for AI.
3. Classification of Machine Learning.
4. Difference between Machine Learning and Artificial Intelligence.
5. Machine Learning Techniques.
6. Types of Learning.
7. Machine Learning System Design.
8. Supervised Learning- Regression Classification.
9. Future scope of Machine Learning And Artificial Intelligence.

### **Session 2**

#### **Python Programming**

1. Introduction to python
2. Conditional Statements
3. Looping, Control Statements
4. Lists, Tuple ,Dictionaries
5. String Manipulation
6. Functions
7. Installing Packages
8. Introduction of Various Tools
9. Working on Jupyter notebook

## Session 3

### Working on Various Python Library

1. Installing library and packages for machine learning and data science
2. Matplotlib
3. Scipy and Numpy
4. Pandas
5. IPython toolkit
6. Scikit-learn

## Session 4

### Learning Algorithms/Machine Learning

1. Naive Bayes Classification
2. Back-propagation
3. Logistic Regression
4. Support Vector Machines (SVM)
5. Random Forest
6. Decision Tree
7. k-Nearest Neighbors (KNN)
8. K-Means Clustering

## Session 5

### Deep Learning

1. Introduction to Deep Learning
2. Why deep learning?
3. Neural Networks

4. Types of Deep Learning

5. Artificial Neural Networks

## Session 6

### Introduction to Neural Networks

1. Basic Introduction of Neuron

2. The Neuron Diagram

3. Neuron Models

4. Activation Function

5. Binary Step Function and Linear Function Sigmoid

6. Tanh

7. ReLU

8. Leaky ReLU

9. Single Layer Feed-Forward

10. Multi-Layer Feed-Forward

11. Feed Forward Neural Networks

## Session 7

### Projects

1. Classifying MNIST digits using Random Forest

2. Customer churn prediction using ANN

3. Image Segmentation using openCv

4. Face Detection using Haar Cascades

5. Making snapchat Filters

\* - **NOTE:** Workshop content is just for a reference. Workshop organisers may modify the content according to time constraints.

## For further queries:

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Or reach out to the **Workshop Management Team** [here](#).