



Deep Learning Workshop

Techfest is the annual science and technology festival of IIT Bombay. Following is the basic outline of the workshop that would be happening at **Techfest, IIT Bombay**.

DAY 1

Session 1

- Introduction to Python
- Mutability
- Variables, Scope
- Single Types
- Ints, Floats, Rounding, Casting, Coercion, Booleans, Randoms & Printing
- Group Types
- List, Tuples, Dictionary
- Operators
- Conditional
- Recurrence
- Classes

Session 2

- Neural network and deep learning Prerequisites
- Numpy
- Pandas
- Matplotlib
- Scipy
- Introduction to Tensorflow and Machine Learning
- Representation Learning



- Neural Networks Introduced
- Introducing TensorFlow
- Tensors

DAY 2

Session 1

- Linear Regression with Single Neuron
- Learning Algorithm
- Individual Neuron
- Linear Regression
- Learning XOR
- XOR Trained
- Neural Networks and Deep Learning
- Operation of a Single Neuron
- The Activation Function
- Training a Neural Network: Back Propagation
- Automobile Price Prediction - Exploring the Dataset
- Automobile Price Prediction - Using TensorFlow for Prediction
- Hyperparameters
- Preventing Overfitting



Session 2

- RNN
- Review and Sentiment Analysis using RNN
- Introduction to RNN
- RNN cell
- RNN for Image Classification
- Long/Short Term Memory cell
- Text in numeric form
- Sentiment Analysis
- Introduction to CNN

Projects:

- Data prediction model
- Data analytics Model
- Automobile price prediction model
- Image Classification Model
- Sentiment analysis model