



One-week Faculty Development Programme
on
“Deep Learning using Python Programming”

Venue: Manipal University, Jaipur

Date: 08-12 July 2019

Date	Time	Topic
(Day 1) 08-07-2019	09:00am-09:30am	– Registration and Reporting
	09:30am-10:00am	– Inauguration
	10:00am-10:15am	– Tea Break
	10:15am-1:00pm	– Expert Lecture by Prof. M.K. Bhuiyan, IIT Guwahati
	1:00pm-02:00pm	– Lunch Break
	02:00pm-03:30pm	– Session Continues
	03:30pm-03:45pm	– Tea
	03:45pm-5:15pm	– Session Continues
	5:15pm – 5:30pm	– MCQ
(Day 2) 09-07-2019	09:30am-11:00am	Introduction Deep Learning – Artificial Intelligence Applications, – Types of Learning, – Supervised, Unsupervised and Reinforcement learning.
	11:00am-11:15am	– Tea Break
	11:15am-1:00pm	– Session Continues
	1:00pm-02:00pm	– Lunch Break
	02:00pm-03:30pm	Artificial Neural Networks – The Neuron Diagram – Neuron Models & Neural Network – step function – Functioning of Neurons Activation functions Gradient Descent, Stochastic Descent, ramp function, sigmoid function, Gaussian function
	03:30pm-03:45pm	– Tea
	03:45pm-5:15pm	– Session Continues
	5:15pm – 5:30pm	– MCQ
(Day 3) 10-07-2019	09:30am-11:00am	introduction to deep neural network – Installing Libraries – Creating ANN Python – single-layer feed-forward – Multi-layer feed-forward, Recurrent – Perceptron, multilayer network, backpropagation, – Training the model
	11:00am-11:15am	– Tea Break
	11:15am-1:00pm	– Session Continues
	1:00pm-02:00pm	– Lunch Break
	02:00pm-03:30pm	Convolutional Neural Networks (CNN) – Introduction of Convolutional Neural Networks – What are convolutional neural networks? Convolution Operation – ReLU Layer



		<ul style="list-style-type: none"> - Pooling - Flattening - Full Connection - Softmax & Cross-Entropy
	03:30pm-03:45pm	<ul style="list-style-type: none"> - Tea
	03:45pm-5:15pm	<p>Building Convolution Neural Networks</p> <ul style="list-style-type: none"> • Installing Keras • Build complete CNN Network • Evaluating, Improving and Tuning the CNN <p>Lab: Apply Convolutional Neural Networks in practice Image Recognition</p>
	5:15pm – 5:30pm	<ul style="list-style-type: none"> - MCQ
(Day 4) 11-07-2019	09:30am-11:00am	<p>Introduction of Recurrent Neural Networks</p> <ul style="list-style-type: none"> - What You'll Need for RNN - The idea behind Recurrent Neural Networks - The Vanishing Gradient Problem - LSTMs - Practical intuition - LSTM Variations
	11:00am-11:15am	<ul style="list-style-type: none"> - Tea Break
	11:15am-1:00pm	<ul style="list-style-type: none"> - Session Continues
	1:00pm-02:00pm	<ul style="list-style-type: none"> - Lunch Break
	02:00pm-03:30pm	<p>Building a RNN</p> <ul style="list-style-type: none"> - How to get the dataset - Installing Keras - Building a RNN in 10 steps <p>Evaluating the RNN Improving the RNN Tuning the RNN</p>
	03:30pm-03:45pm	<ul style="list-style-type: none"> - Tea
	03:45pm-5:15pm	<ul style="list-style-type: none"> - Session Continues
	5:15pm – 5:30pm	<ul style="list-style-type: none"> - MCQ
(Day 5) 12-07-2019	09:30am-11:00am	<p>Introduction Boltzmann Machines</p> <ul style="list-style-type: none"> - Boltzmann Machine - Energy-Based Models (EBM) - Editing Wikipedia - Our Contribution to the World - Restricted Boltzmann Machine - Contrastive Divergence - Deep Belief Networks - Deep Boltzmann Machines
	11:00am-11:15am	<ul style="list-style-type: none"> - Tea Break
	11:15am-1:00pm	<ul style="list-style-type: none"> - Session Continues
	1:00pm-02:00pm	<ul style="list-style-type: none"> - Lunch Break
	02:00pm-04:30pm	<p>Building a Boltzmann Machine</p> <ul style="list-style-type: none"> - How to get the dataset - Installing PyTorch - Building a Boltzmann Machine Introduction
	04:30pm-04:45pm	<ul style="list-style-type: none"> - MCQ
	04:45pm-05:00pm	<ul style="list-style-type: none"> - Tea
05:00pm onwards	<ul style="list-style-type: none"> - Valedictory and Certificate Distribution 	