

Online Value Added Course on Deep Learning Foundations

Conducted by

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#iitKLIV
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Instructor's Overview



Sista Raviteja

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Area of Research: Surgical Video Analytics,
Knowledge Graphs, Deep Learning

Know more at:

<https://sites.google.com/view/sistaraviteja>



Course Overview

Weeks	Broad Topic	Delivery	Mode
Day 1	Introduction to Deep learning	Theory + Hands on	Online
Day 2	Basics of Neural Networks		
Day 3	Introduction to Convolution Neural Networks		
Day 4	Complexity Analysis of Deep Neural Networks and Selecting a Deep Neural Network		



Course Contents

Date	Time	Broad Topic	Topic	Description
2/19/2025	2 Hours	Basics of Learning and Introduction to Deep Learning	Intution to Learning and Basics of Learning	Course overview
				Learning
				Human Vs Machine perspectives
				Formulation and Relation to AI/ML
				Types of Learning
2/20/2025	2 Hours	Introduction to Neural Networks	Perceptron Theory and Working of MLP	Perceptron – neurons
				Perceptron working (with backpropagation)
				Non-linearity (touch up)
				Flow on information in MLP
				MLP tutorial and applications
2/21/2025	2 Hours	Introduction to Convolution Neural Networks	Working of CNN and Applications	Drawbacks of MLP
				Working of CNN
				Proof of invariance and equivaraiance of conv kernels
				1D conv and 2D conv Hands on
2/22/2025	2 Hours	Complexity Analysis of Deep Neural Networks	Space and Compute Complexity Analysis	Linear Layers
				Convolution Layers
				Hands on example for proving space and compute complexity of neural network



Platforms

Class Streaming:

- Google Meet (Primary)

Software and platforms

- PyTorch
- Anaconda
- Colaboratory

Slides and Tutorials :

- GitHub :
<https://github.com/SistaRaviteja/Foundations-of-DeepLearning-2025>

Thank You

For your Attention!

Any Questions?

