

Joint Winter Faculty Development Program on Machine Learning for Computer Vision

February 21-March 4, 2022

Tentative Schedule

Date	2:30 PM-3:00 PM	3:00 PM-4:30 PM	4:30 PM – 6:00 PM	6:00 PM- 8:00 PM
Feb 21, 2022 MON	Inaugural	Lect 1 Frontiers of AI for Computer Vision Prof. P.K. Biswas, IIT Kharagpur	Break	Lab 1: Introduction to Python, Jupyter Notebook, Pytorch, Google Colab. Ms. Poornima Singh Thakur, IITDM Jabalpur
	2:30 PM - 4:30 PM			6:00 PM-8:00 PM
Feb 22, 2022 TUES	Lect 2 Intro to Image Processing, Algorithms on edge detection, image enhancement, segmentation etc. Dr Rajib Jha, IIT Patna		Break	Lab 2: Code writing for Image processing methods - Edge detection, and Image Enhancement Mr Samir Jain, IITDM Jabalpur
Feb 23, 2022 WED	Lect 3 Intro to AI and ML (supervised and unsupervised learning methods. K-means, SVM) with applications to Image Processing Dr M Tanveer, IIT Indore			Lab 3: Python libraries, First program on Image classification using an ML algorithm Ms. Poornima Singh Thakur
Feb 24, 2022 THU	Lect 4 Neural Networks and Back Propagation Dr. Partha Pratim Roy, IIT Roorkee			Lect 5 Neural Networks: Regularization, Optimization and Challenges in training deep neural networks, Vanishing gradient problem. Dr. Partha Pratim Roy
Feb 25, 2022 FRI	Lect 6 Convolution Neural Networks (CNNs) Prof. Aparajita Ojha, IITDM Jabalpur			Lab 5: Building a classification model using CNN, Use of Tensorflow and Pytorch Ms. Poornima Singh Thakur
Feb 26, 2022 SAT	Lect 7 Deep CNN architectures, Transfer Learning and Applications Dr Santosh Viparthy, IIT Guwahati /MNIT Jaipur			Lab 6: Transfer learning and classification for plant disease classification Ms. Poornima Singh Thakur
Feb 28, 2022 MON	Lecture 8 Object Detection using CNN Prof. Aparajita Ojha			Lab 7: Using YOLO the and Darknet Framework for object detection Ms. Poornima Singh Thakur
March 2, 2022 WED	Lecture 9 Autoencoder and Their Applications Prof. Aparajita Ojha			Lab 8: Image Denoising with an autoencoder Ms Shubhangi Chaturvedi , IITDM Jabalpur
March 3, 2022 THU	Lecture 10 CNN Applications in Segmentation and Medical Image Analysis MATLAB Experts			Lab 9: Building a CNN model for image segmentation with application to fire/smoke segmentation in satellite images Ms Shubhangi Chaturvedi , IITDM Jabalpur
March 4, 2022 FRI	Lecture 11 Recent Trends in ML for CV -1 Prof. R. Balasubramanian, IIT Roorkee			Lecture 12: Recent Trends in ML for CV -2 (6:00 - 7:30 PM) , Dr Santosh Viparthy Valedictory 7:30 PM