Electronics & ICT Academy

(Under Ministry of Electronics and Information Technology (MeitY), Govt. of India)
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Online Faculty Development Programme on

"Machine Learning for Signal and Image Processing"

Date: 04 – 09, December 2023

Date	Time	Topic
Day-1 (04-12-2023)	10:00 am - 10:15 noon	***INAUGURATION***
	10:15 am - 01:00 pm	Introduction to Machine learning, Supervised, Unsupervised and Reinforcement Learning, Introduction to Image and Video data, Representation, Classification or Recognition from data
	01:00 pm - 02:00 pm	***LUNCH BREAK***
	02:00 pm - 03:00 pm	Introduction to Python (pandas and NumPy)
	03:00 pm - 05:00 pm	Hands-on Practice
Day-2 (05-12-2023)	10:00 am - 01:00 pm	Feature extraction: From Images (SIFT, Wavelet, HoG) and Videos (BoVW) Regression: Linear Regression and Logistic Regression, Bayesian Learning: Bayes theorem, Bayes Optimal Classifier, Naive Bayes classifier, Support Vector Machine (SVM)
	01:00 pm - 02:00 pm	***LUNCH BREAK***
	02:00 pm - 03:00 pm	Linear Perceptron, Self-Organizing Maps
	03:00 pm - 05:00 pm	Hands-on Practice
Day-3 (06-12-2023)	10:00 am - 01:00 pm	Deep learning methods: Training in Deep Feed forward NNs, Convolutional NNs (CNN), Training CNNs, Standard architectures
	01:00 pm - 02:00 pm	***LUNCH BREAK***
	02:00 pm - 03:00 pm	Features of Deep Networks: Transfer learning, multi-task learning, Transformation invariant learning
	03:00 pm - 05:00 pm	Hands-on Practice
Day-4 (07-12-2023)	10:00 am - 01:00 pm	Applications of Deep Nets: Image segmentation, Object recognition, Transformation invariant recognition
	01:00 pm - 02:00 pm	***LUNCH BREAK***
	02:00 pm - 03:00 pm	Visual Tracking with Deep trained nets
	03:00 pm - 05:00 pm	Hands-on Practice
Day-5 (08-12-2023)	10:00 am - 01:00 pm	Introduction to other Deep learning Methods: GANs (Generative Adversarial Networks), Bayesian Belief Networks for Semi-supervised learning
	01:00 pm - 02:00 pm	***LUNCH BREAK***
	02:00 pm - 03:00 pm	Recurrent NN
	03:00 pm - 05:00 pm	Hands-on Practice
Day-6 (09-12-2023)	05 Hours	***PROJECT WORK***

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