

**SCHEDULE FOR WORKSHOP ON AI AND DEEP LEARNING**  
**17-21 SEPTEMBER, 2019**  
**E&ICT ACADEMY , IIITDM, JABALPUR**

**Day 1 September 17, 2019: Introduction to AI and Recent Trends & Artificial Neural Networks:**

<b>1 PM to 2.30 PM</b> [LECTURE]	Overview of Artificial Intelligence, machine learning and deep learning Artificial Neural Networks, Feedforward Neural networks, Backward Propagation
<b>2.30 PM to 4.00 PM</b> [LAB]	Introduction to Python Programming, Tensorflow and Keras
<b>4.00 PM TO 4.15 PM</b>	<b>TEA BREAK</b>
<b>4.15 PM to 6.15 PM</b> [LAB]	Building a Neural Network for classification problem, training and testing Saving the best weights and the model

**Day 2 September 18, 2019: Convolutional Neural Networks – Part I**

<b>10 AM to 11.30 AM</b> [LECTURE]	Regularization and Optimization in Artificial Neural networks Convolutional Neural Network (CNN), Convolution/Pooling layers
<b>11.30 TO 11.45</b>	<b>TEA BREAK</b>
<b>11.45 AM to 1.15 PM</b> [Lecture]	CNN Architectures, Deep Residual Networks, GoogleNet
<b>1.15 PM TO 2.00 PM</b>	<b>LUNCH BREAK</b>
<b>2 PM to 3.00 PM</b> [LAB]	Building a CNN model for image classification
<b>3.00 PM to 3.15 PM</b>	<b>TEA BREAK</b>
<b>3.15 PM to 5.15 PM</b> [LAB]	Using Google Colab for building and training Deep Learning Models

**Day 3 September 19, 2019: Convolutional Neural Networks – Part II**

<b>9.30 AM to 11.00 AM</b> [LECTURE]	Autoencoders and Generative Adversarial Network (GAN)
<b>11.00 TO 11.15</b>	<b>TEA BREAK</b>
<b>11.15 AM to 1.15 PM</b> [LAB]	Using pretrained models-Applying ResNet on some specific problems
<b>1.15 PM TO 2.00 PM</b>	<b>LUNCH BREAK</b>
<b>2 PM to 3.00 PM [LAB]</b>	Building and training autoencoders and GAN
<b>3.00 PM to 3.15 PM</b>	<b>TEA BREAK</b>
<b>3.15 to 4.15 PM [LAB]</b>	Lab continued
<b>4.15 PM to 5.15 PM</b> [LECTURE]	Application of GAN in synthetic image creation. Using autoencoder for image feature extraction.

**Day 4 September 20, 2019: Recurrent Neural Networks(RNN)**

<b>10 AM to 11.30 AM</b> [LECTURE]	Brief Introduction to Recurrent Neural Networks. LSTM, GRU and their applications in machine translation.
<b>11.30 TO 11.45</b>	<b>TEA BREAK</b>
<b>11.45 AM to 1.15 PM</b> [LECTURE]	Attention Models, Beam Search method and applications to language modelling
<b>1.15 PM TO 2.00 PM</b>	<b>LUNCH BREAK</b>
<b>2 PM to 3.00 PM [LAB]</b>	Building an AI application for sentiment classification from travel\hotel website user feedback data
<b>3.00 PM to 3.15 PM</b>	<b>TEA BREAK</b>
<b>3.15 PM to 5.15 PM</b> [LAB]	More applications of RNN

<b>Day 5 September 21, 2019: CNN Application to Object Detection problems</b>	
<b>10 AM to 11.30 AM</b> [LECTURE]	Object detection algorithms, YOLO
<b>11.30 TO 11.45</b>	<i>TEA BREAK</i>
<b>11.45 AM to 1.15 PM</b> [LAB]	Installing Darknet framework on your laptop, how to use YOLO for object detection.
<b>1.15 PM TO 2.00 PM</b>	<i>LUNCH BREAK</i>
<b>2 PM to 3.00 PM</b> [LECTURE]	Object detection algorithms ( continued), SSD
<b>3.00 PM to 3.15 PM</b>	<i>TEA BREAK</i>
<b>3.15 PM to 4.15 PM</b> [LAB]	Applications of YOLO on different types of image datasets
<b>4.15 PM to 4.30 PM</b>	Valedictory Function