

Image Processing and Deep Learning

2 Weeks / 30 Hrs. (3 Hrs. per day)
Medium of Instruction: English

Objective

The objective of this course is to enable the candidates to apply image processing methods to enhance images and make them useful for real life problem solving. The candidates will learn the basics of deep learning models and they can come up with solutions for problems including image processing, object identification and classification.

Eligibility

B.E./ B.Tech/ M.S./ M.C.A./ M.C.S./ DOEACC "B" Level/ M.Sc./
Master Degree in Mathematics or Statistics.
[Candidates undergoing these courses are also eligible to apply.]

Prerequisite

- ✓ Basic knowledge in computer science and basic Python programming.
- ✓ Candidate must have i5/i7 or better computer with preferably 8 GB RAM or higher
- ✓ Internet connection with good speed (preferably 2Mbps or higher)

Course Fees

Rs. 1000/- [including GST]

Certificate

Certificate will be provided to the participants after the assessment conducted at the end of the course.

Methodology

- ✓ Instructor-led live sessions
- ✓ Online/ Blended lab sessions
- ✓ Content access through LMS
- ✓ Assessment and Certification

Intended Users

Anyone who is interested to learn image processing using OpenCV and Deep Learning Model Development
Students undergoing graduate or post graduate courses/Research scholars who would like to learn how to implement projects in image processing and deep learning area.

Course Content

Image Processing & Deep Learning

- *Python Basics, NumPy*
- *Machine Learning, Classification, Regression & Clustering*
- *Image Processing in OpenCV*
- *Image Cropping, Resizing*
- *Translation, Scaling, Rotation*
- *Dilation, Erosion*
- *Thresholding, Binarization*
- *Sharpening, Blurring images*
- *Detecting Lines, Edges, Contours, Corners*
- *Image Enhancement in OpenCV*
- *Contrast Stretching*
- *Histogram Equalization*
- *Contrast Limited Adaptive Histogram Equalization*
- *Image Segmentation*
- *Face recognition, Video Analysis*

- *Deep Learning*
- *Artificial Neural Networks*
- *Feedforward Neural Networks*
- *Activation Functions, Sigmoid, ReLU, tanH etc.*
- *Convolutional Neural Networks*
- *CNN Implementation in Keras and TensorFlow.*
- *Image Classification using CNN*
- *Image Data Generator and augmentation methods.*
- *Popular CNN Model Architectures LeNet, VGGNet, ResNet, etc.*
- *Transfer Learning*
- *Recurrent Neural Networks*
- *Implementation of RNN in Keras*

Faculty

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