

## COMPUTER VISION WITH PYTHON



### ABOUT THE COURSE :

Computer Vision is the heart of Artificial Intelligence that can perceive, understand and reconstruct the visual world. Computer Vision is one of the fastest growing AI disciplines in Academia and Industry. This course will give opportunity to students to learn computer vision including feature extraction, object detection, object classification and stereo vision with their implementation in Python. The theory sessions are assisted by hands on implementations on ARM Beagle bone and Raspberry-Pi.

Come, Join and develop the future vision...

What is to come in the future with computer vision will by far be amazing.

### COURSE CONTENTS :

- ▶ Image Pre-processing Techniques, Smoothing, Background subtraction, Neighborhood Operators
- ▶ Image Pyramids, Median filter, Geometric Primitives and transformation,
- ▶ Image Segmentation
- ▶ ROI selection
- ▶ Feature Detection, Points, Patches, Edges, Lines, HOG, Haar-like, Line detection using Hough transform
- ▶ Feature extraction, Thresholding, Blob detection, Template matching, Edgelets, Edge linking, FLANN.
- ▶ Object Classifiers, Neural Network, Fuzzy Logic, SVM, K-means
- ▶ Motion Estimation and Tracking, Spline based motion, Layered Motion, Optical Flow, Kalman filter
- ▶ Gradients and Edge Detection
- ▶ Contours
- ▶ Object Detection / Classification
- ▶ Object Tracking
- ▶ Stereo Imaging from Monocular Cameras, Structure from Motion, Fitting Lines in 2D and 3D.



### PROJECTS :

- 1) Webcam Face Detection
- 2) Object Tracking in a Video
- 3) Eye Tracking

The Complete Solution to Projects including Algorithms and Working Codes will be shared with Course Participants.

**COMMENCEMENT DATE:**

19<sup>th</sup> January, 2018

**CONCLUSION DATE:**

30<sup>th</sup> January, 2018

**BATCH 1**

8:30 AM to 10:00 AM  
(Saturday to Sunday)

**BATCH 2**

10:30 AM to 12:00 PM  
(Saturday to Sunday)

**COURSE FEE: RS. 1534/- (INCLUDING SERVICE TAX)**

### Course Instructors

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