Late Shri Vishnu Waman Thakur Charitable Trust's
VIVA Institute of Technology
Shirgaon, Virar (East), Tal: Vasai, Dist: Palghar-401305, Maharashtra.
Website: www.viva-technology.org

Department of Electronics and Telecommunication Engineering

Report on Four days Short Term Training Program on

"Basics of Image Processing"

Organized by Electronics and Telecommunication Department

Day 1: Sesssion1

The workshop started with the understanding the need of image processing, followed by the wide range of applications of image processing. Further, an insight on the basic procedures involved in any kind of image processing and the components of an image processing system were provided.

Day 1: Sesssion2

For the better understanding of what kind of data formats are to be processed in image processing different types of images were discussed which includes binary images, grayscale images, 16 bit and 24 bit color images.

Day 2: Sesssion 1

To study the factors that affect the resolution of the image sampling and quantization in the image were explained. For Practical, programs related to spatial and tonal resolution were performed.

Day 2: Sesssion 2

In this session the need of color image processing was explained. Also different color models like RGB color model, safe RGB, CMY/CMYK, HSI, YCbCr were explained. Pseudo color image processing was explained and a demo was given with the help of a program in MATLAB. Different programs related to conversion of one color model to another color model were performed.

Day 3: Sesssion1

Introduction to image enhancement was given. Seven techniques of image enhancement using point processing were explained mathematically.

Day 3: Sesssion 2

For the practical session, image was enhanced using digital negative technique, contrast stretching, thresholding, gray level slicing, bit plane slicing.

Day 4: Sesssion1

In this session, Neighborhood processing was explained with its applications. Different neighborhood processing techniques were performed on an image to enhance the image. This included, low pass, high pass and high boost filtering. Histogram modeling was also explained with its application.

Day 4: Sesssion 2

Image segmentation and image compression techniques were discussed in this session. Image segmentation techniques included prewitt, sobel, canny edge detector. Practical session included programs based on histogram equalization, prewitt and sobel filters and a Quiz.

At the end of STTP participants are able to

- ✓ To get familiarized with Image Processing toolbox.
- ✓ To learn about application in image processing.
- ✓ After the completion of this course the participants will be able to sample and quantize the image using matlab software.
- ✓ Develop innovative design for practical applications using spatial and tonal resolution.
- ✓ Image Segmentation and image compression techniques were also discussed.

The University of Mumbai introduced revised curriculum which includes, Image and Video Processing as compulsory subject for the final year students in SEM VII

With keeping this as an intension the STTP was conducted from 18th Decemmber to 23rd December, 2015 in VIVA Institute of Technology, Electronics and Telecommunication Engineering Department.

Details of the speakers is as under

SN.	**Name of the Guest Speaker**	**Details of the Speaker**	**Topics Addressed**	Date
1	Prof. Chandani Patel	Assistant Professor	Need of Image Processing and wide range of application.	18/12/2015
2	Prof. Brijesh Joshi	Assistant Professor	Sampling and Quantization of image using matlab software.	21/12/2015
3	Prof. Madhura Tilak	Assistant Professor	Introduction to Image Enhancement and its seven techniques.	22/12/2015
4	Prof. Chitra Takle	Assistant Professor	Histogram Modelling, Image segmentation and image compression	23/12/2015

Participants were the teaching faculty of Engg. College. Total of 10 faculty members participated in the Four days Short Term Training Program conducted.

In valedictory function institute had received the feedbacks from the participants that they have learned and enhanced their knowledge in this STTP and they would always want to attend this kind of STTP in this institute once again. The overall feedback of the Training Program was encouraging and was highly rated by the participants