



Kalpataru Vidya Samsthe®
Kalpataru Institute of Technology
Tiptur – 572201



Report on Two weeks Faculty development program on “Advances in image processing and computer vision applications using Python and OpenCV” organized by the Department of Electronics and Communication Engineering from 11- 23 December 2017.

A two week national level, AICTE funded workshop on “*Advances in image processing and computer vision applications using Python and OpenCV*” was organized by the Department of Electronics and Communication Engineering, from 11 – 23 December 2017. For the workshop, around 250 applications were received. Out of which 60 were selected on first come first serve basis.

The main objective of the workshop was to provide the knowledge about recent happenings in computer vision, image processing and their application development using Python and OpenCV platform. For this workshop, ITIE solutions, Bangalore was technical partners.

The inaugural ceremony witnessed the presence of two chief guests; **Dr. D. S. Guru**, Professor and Chairman, Dept. of Studies in Computer Science, Mysore University, Mysore and **Dr. Srinivas Balli**, Member, SWRC, AICTE, Bangalore and Trivandrum region. Along with them, **Sri. P. K. Thipperudrappa**, President KVS; **Sri. S. S. Nataraj**, Vice President, KVS, Prof. Rajakumar, Secretary, KVS; **Sri. K. P. Rudramuniswamy**, Secretary, KVS; **Dr. Y. P. Gowramma**, In-charge Principal, KIT; **Dr. Rajashekararadhya**, FDP Coordinator; **Prof. G. S. Yogananda**, FDP Convener were also present in this auspicious occasion.

Prof. G. S. Yogananda, FDP Convener, HOD, Dept. of ECE, formally welcomed the dignitaries and participants. He also provided a brief introduction to the workshop.

Dr. D. S. Guru, Professor and Chairman, Dept. of Studies in Computer Science, Mysore University, Mysore in his motivational speech, explained the link of human evolution and computations. In his continued talk, a good introduction to the concept of computer vision is provided.

Dr. Srinivas Balli, Member, SWRC, AICTE, Bangalore emphasized the importance of learning new technologies and the importance of such workshops.

On this occasion, Dr. D. S. Guru and Dr. Srinivas Balli were honored with felicitation.

Prof. T. V. Narendra, Assistant Professor, Dept. of ECE, KIT, Tiptur proposed vote of thanks.

Prof. S. Shambavi, Assistant Professor, Dept. of ECE, KIT, Tiptur, was the Master of Ceremony.

Inauguration by lighting the Lamp by Chief guests and Guests of honor



Felicitation to Dr. D. S. Guru



Felicitation to Dr. Srinivas Balli





Sessions Table			
Date	Time	Activity	Session Handled by
11/12/2017 Monday	09.30 - 11.30	Inauguration and keynote address	Dr. D S Guru, Mysore University.
	11.45 - 01.00	Lecture: Basics of Python- OpenCV	itie Knowledge Solutions, Bengaluru.
	02.00 - 03.30	Hands on session : Python Training	itie Knowledge Solutions, Bengaluru.
	03.45 - 05.00	Hands on session : Python Training	itie Knowledge Solutions, Bengaluru.
12/12/2017 Tuesday	09.30 - 11.00	Lecture: Randomized visual secret sharing scheme for gray-scale and colour Images	Dr. Alwyn Roshan Pais, NITK, Surathkal.
	11.30 - 01.00	Lecture: Basic operations on images using Python-OpenCV	itie Knowledge Solutions, Bengaluru.
	02.00 - 03.30	Hands on session : OpenCV and Python training	itie Knowledge Solutions, Bengaluru.
	03.45 - 05.00	Hands on session : OpenCV and Python training	itie Knowledge Solutions, Bengaluru.
13/12/2017 Wednesday	09.30 - 11.00	Lecture: GUI operations for images using Python	itie Knowledge Solutions, Bengaluru.
	11.30 - 01.00	Lecture: GUI operations for images using Python	itie Knowledge Solutions, Bengaluru.
	02.00 - 03.30	Hands on session : Image processing in Python	itie Knowledge Solutions, Bengaluru.
	03.45 - 05.00	Hands on session : Image processing in Python	itie Knowledge Solutions, Bengaluru.
14/12/2017 Thursday	09.30 - 11.00	Lecture: Filtering operations on images using Python	itie Knowledge Solutions, Bengaluru.
	11.30 - 01.00	Lecture: Thresholding and edge detection algorithm for images using Python	itie Knowledge Solutions, Bengaluru.
	02.00 - 03.30	Hands on session : Applying filters for images using Python-OpenCV	itie Knowledge Solutions, Bengaluru.

	03.45 - 05.00	Hands on session : Applying edge detection technique for images using Python-OpenCV	itie Knowledge Solutions, Bengaluru.
15/12/2017 Friday	09.30 - 11.00	Lecture: Morphological operations and image transformations using machine learning algorithm in Python and OpenCV	itie Knowledge Solutions, Bengaluru.
	11.30 - 01.00	Lecture: Morphological operations and image transformations using machine learning algorithm in Python and OpenCV	itie Knowledge Solutions, Bengaluru.
	02.00 - 03.30	Hands on session : Machine learning algorithm using Python-OpenCV	itie Knowledge Solutions, Bengaluru.
	03.45 - 05.00	Hands on session : Machine learning algorithm using Python-OpenCV	itie Knowledge Solutions, Bengaluru.
16/12/2017 Saturday	09.30 - 11.00	Lecture: Introduction to neural networks	Dr. Dinesh R, Principal Engineer, Samsung Electro Mechanics, Bengaluru.
	11.30 - 01.00	Lecture: Convolutional neural networks	Dr. Manjunath S, Chief Engineer, Samsung Electro Mechanics, Bengaluru.
	02.00 - 03.30	Lecture: Recursive neural networks and its applications	Dr. Vinay K, Lead Engineer, Samsung Electro Mechanics, Bengaluru.
	03.45 - 05.00	Lecture: Recent advances in deep learning	Dr. Chethana Kumara B M, Lead Engineer, Samsung Electro Mechanics, Bengaluru.

18/12/2017 Monday	09.30 - 05.00	Industrial visit	
19/12/2017 Tuesday	09.30 - 11.00	Lecture: Introduction to open source hardware	itie Knowledge Solutions, Bengaluru.
	11.30 - 01.00		
	02.00 - 03.30		
	03.45 - 05.00		
20/12/2017 Wednesday	09.30 - 11.00	Hands on Session: Raspberry Pi and case studies on CV using Python and hardware	itie Knowledge Solutions, Bengaluru.
	11.30 - 01.00		
	02.00 - 03.30		
	03.45 - 05.00		
21/12/2017 Thursday	09.30 - 11.00	Lecture: Machine learning for image processing	Dr. Suryakanth V Gangashetty, IIIT, Hyderabad.
	11.30 - 01.00	Lecture: Local verses global descriptors for computer vision applications	Dr. B.H.Shekar, Professor, Dept. of CSE, Mangalore University, Mangalore.
	02.00 - 03.30	Lecture: 3D reconstruction	Dr. K V Suresh, Prof & Head, Dept. of ECE, SIT, Tumkur,
	03.45 - 05.00	Hands on session: Stereo based 3D reconstruction	Mr. N C Dayananda Kumar, Dept. of ECE, SIT, Tumkur.
22/12/2017 Friday	09.30 - 11.00	Lecture: Clustering algorithms	Dr. Chandrika, Professor, MCE Hassan.
	11.30 - 01.00	Lecture: Application of symbolic data analysis concepts for hand written signature analysis	Dr. H N Prakash, Professor & HOD, Dept of CSE, Rajeev Institute of Technology, Hassan.
	02.00 - 03.30	Lecture: Optimization algorithms	Dr. Ramesh, Professor, MCE Hassan.
	03.45 - 05.00	Lecture: Dynamic image processing	Dr. Y P Gowramma, Professor, KIT, Tiptur
23/12/2017 Saturday	09.30 - 11.00	Lecture: Automatic 3D view generation	Dr. Geetha Kiran A, Professor, Special Officer, VTU, Belagavi.
	11.30 - 01.00	Lecture: Computer vision applications	Dr. Punitha, IBM India Pvt Ltd, Bengaluru.
	02.00 - 04.00	Valedictory ceremony	

Breakfast: 8:30am - 9:30am

Lunch: 1:00pm - 2:00pm

Dinner: 8:30pm - 9:30pm

Date: 11-12-2017

Session 1: 12:00pm – 1:15pm

The first session was handled by Prof. Rashmi, ITIE solutions, Bangalore. She provided a brief description to the concept of Python and OpenCV. In the introductory talk, the evolution of python, its capabilities were explained.



Session 2: 2:15pm – 3:15pm

Prof. Rashmi, ITIE solutions, Bangalore continued her talks on Python and OpenCV. In this session, syntax and programming methodology of python was discussed. In continuation, the process of Python and OpenCV installation and settings were explained in detail.



Session 3: 3:30pm – 5:00pm

This session included hands-on experience (Lab session). Prof. Rashmi, ITIE solutions, Bangalore in her continued talk, provided a link to theory sessions. Basic syntax of Python programming was practically experienced by the participants. An introduction from single line statements upto few mathematical expression were solved in this sessions.



We thank Prof. Rashmi, ITIE solutions, Bangalore for providing a meaningful introduction to Python, OpenCV and conducting hands-on session on the same.