



## **Report on Workshop on Python and OpenCV**

**Organized by**

**Electronics and Communication Engineering Department,  
Accredited by National Board of Accreditation**

**&**

**ISTE Student chapter**

**Sarvajnik College of Engineering and Technology, SCET**

One day workshop on “Python and OpenCV” was organized on 20<sup>th</sup> July, 2019 by Electronics and Communication faculty members especially for the ECC students as well as other engineering branches too who can take benefit out of the said topic. This workshop was organized under the banner of ISTE Student chapter, Gujarat section. The workshop coordinators were Dr. Nehal Shah (ECC Dept.) and Prof. Vandana Shah (ISTE department representative, ECC). The workshop was conducted at AV room of ECC department.

Python Programming workshop was intended for hardware and software engineers both for generating the different applications. Moreover it could be beneficial to systems analysts, program managers and user support personnel who wish to learn the Python programming language. The Objectives behind the arrangement of this workshop was to understand why Python is a useful scripting language for engineers, to learn how to design and program Python applications, to learn how to use lists, tuples, and dictionaries in Python programs. Moreover to learn how to use indexing and slicing to access data in Python programs, to learn how to write loops and decision statements in Python.

Most important part of this workshop was to learn how to write functions and pass arguments in Python as well as to learn how to read and write files for image and video processing in Python, as these could come up with some great applications in image processing domain.

Around 4 students of final year CO department, 37 students from pre-final year ECC and IT department as well as total 10 students from 2<sup>nd</sup> year ECC department have participated. This manifested that there is a requirement of said topic in other branches too. The workshop speaker, Mr. Bhaumik Vaidya was one of the experts in the field of machine learning and python programming who have delivered all the sessions. He explained very humbly to all the participants about importance of this Python language and OpenCV for image processing and video processing.

The first session of the workshop was the installation of Anaconda and OpenCV software by the students themselves. In the first half basic introduction about python along with programming and coding techniques were taught. The students performed some of the python programs themselves from the handout examples provided to them.

In the second half students were taught about introduction to image processing and various techniques like compression, morphology etc. Students were given adequate time to run the example codes on Anaconda. It was mainly concerned with OpenCV basics and programming. They implemented the handout programs provided to them before hand and had enough practice. Students were taught how to interface real time camera and perform face detection, inversion etc.

At the concluding part of the workshop students' feedbacks were also collected for the future scope and suggestions towards workshop.

### **Coordinators:**

**Dr. Nehal Shah**  
Associate Professor  
ECC Dept, SCET, Surat

**Prof. Vandana Shah**  
Assistant Professor  
ECC Dept, SCET, Surat

**Dr. Maulin Joshi**  
HOD, ECC Dept,  
SCET, Surat

## Schedule of the workshop:

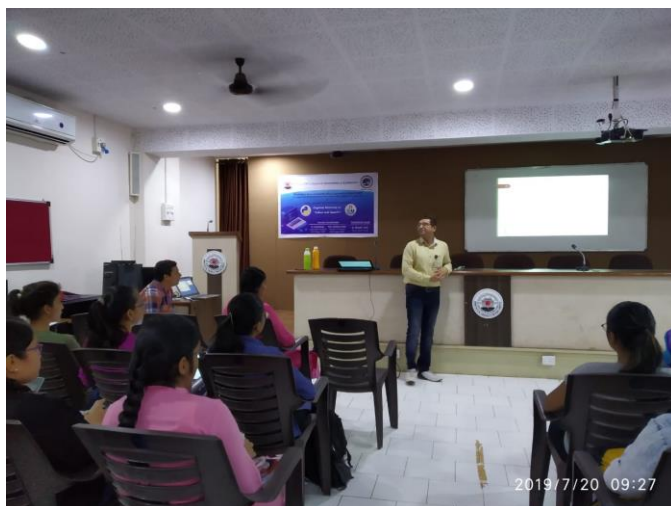
Time	Session
8:30 am to 10:30 am (session I)	Introduction of Python and OpenCV  Installation of Python and OpenCV for all OS
10:30 am to 12:30 pm (session I)	Basics of Python Array and list operation using Numpy library Basic plotting using Matplotlib library Hand on excercises
12:30 pm to 1:00 pm	<b>Lunch Break</b>
1:00 pm to 3:00 pm (session II)	Basics of Image and Video Processing with MATLAB and OpenCV  Image reading and writing using Open CV, Video streaming from webcam, Basic frame operations on Videos Drawing function in OpenCV, Mouse as a Paint-brush, Trackbar as Color-palate
	<b>Tea Break</b>
3:00 to 3:30 PM (session II)	Basic Operations on Images like Read and Edit pixel values, Arithmetic Operations on images, blending, bitwise operations, Changing colorspace- object tracking example, Image processing operations like morphological operation, filtering etc., Example: Object Detection using Haar Cascade.  Hand on exercise
	Feedback of participants

## **Glimpses of the workshop:**

**Felicitation of the speaker Mr.  
Bhaumik Vaidya by  
Dr. Nehal Shah**



**First session in presence of ISTE  
SCET representatives Dr. Mehali  
Mehta and Prof. Hitesh Mehta**



**Introduction to ISTE student chapter,  
SCET by Prof. Hitesh Mehta**

**First session with hands on  
experience of Python programming**





**Second session with  
OpenCV for image  
and video processing**



**Group of ISTE student participants with workshop coordinators and ISTE  
representatives**



**ISTE student volunteer team with workshop coordinators**



**ISTE and Non ISTE Student Participants with speaker and coordinators**





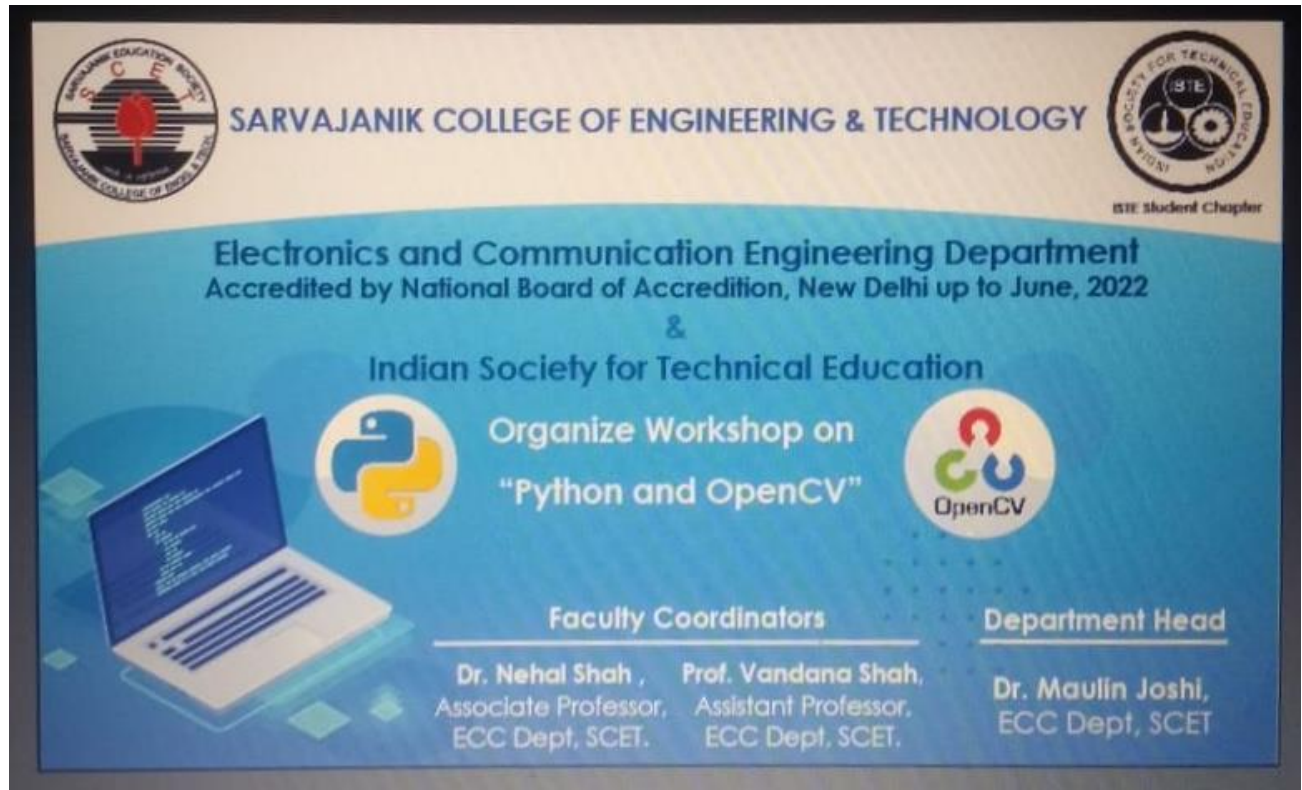
**Certificates to the participants**



**Thanks letter and Memento to the speaker**



## Banner of the workshop:



The banner is for a workshop titled "Python and OpenCV". It features a blue background with a laptop on the left displaying code. The text is centered and includes the names of the faculty coordinators and the department head. Logos for Sarvajani Education Society, Indian Society for Technical Education, Python, and OpenCV are also present.

**SARVAJANI EDUCATION SOCIETY**  
SARVAJANI COLLEGE OF ENGINEERING & TECHNOLOGY

**Indian Society for Technical Education**  
ISTE Student Chapter

**Electronics and Communication Engineering Department**  
Accredited by National Board of Accreditation, New Delhi up to June, 2022

**Organize Workshop on**  
"Python and OpenCV"

**Faculty Coordinators**

<b>Dr. Nehal Shah ,</b> Associate Professor, ECC Dept, SCET.	<b>Prof. Vandana Shah,</b> Assistant Professor, ECC Dept, SCET.
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**Department Head**

**Dr. Maulin Joshi,**  
ECC Dept, SCET