



**ACS** College of Engineering

Approved by AICTE New Delhi, Affiliated to VTU, Belagavi  
(A Unit of RajaRajeswari Group of Institutions)

**CET Code : E186 COMED-K : E003 PG CET : T918**



# SelectSmart Activity Report

On

Lecture# 2: Python Programming

By Dr. Karthik Seemakurthy

Ph.D (IIT Madras), Research Scientist,  
TCS Research & Innovation Labs

## ACTIVITY REPORT

Activity Name & Date	Python Programmingon 23-May-2020
Activity Type	Lecture
Conducted By	CTDS Bangalore

### About the Activity:

This is a lecture / webinar activity presented by Dr. Karthik Seemakurthy, Ph.D (IIT Madras), Research Scientist, TCS Research & Innovation Labs

About the Mentor (via LinkedIn):

"I am passionate about teaching and doing social service. My objective in life is to support atleast 1000 poor students for their education. I would like to become an entrepreneur. I am highly fascinated towards state-of-the-art technology. I regularly follow famous blogs on MIT news, deep learning and many more.

I always like to interact with young ambitious minds. Gave lots of guest lectures and key note talks in national level conferences and symposiums"

I work in the area of Underwater imaging and my thesis title is "Investigations into underwater imaging".

Motivation behind my work:

Humans cannot go beyond 100 meters of water depth. Hence, in order to explore deep oceans (for oil and gas explorations) scientists use remotely operated vehicles (ROV) and out of the various sensors used, optical image sensor plays a major role for the navigation of the ROV. Underwater images can suffer from different types of degradations including color loss, noise due to floating particles, low contrast, skewing and blurring. Hence, for the proper navigation of the vehicle and exploration of deep ocean resources, Digital image processing plays an important in improving the Image quality. My work primarily revolves around enhancing the underwater image quality which is very much needed as a preprocessing step for effectively adopting the existing computer vision algorithms for underwater scenario.

### Video Link of the Activity:

<https://www.youtube.com/watch?v=t06Z07SMsKs&t=736s>

## Invitation:



Rajarajeswari Group of Institutions  
Center for Test and Data Sciences



**Dr Karthik Seemakurthy**

Ph. D (IIT Madras), Research  
Scientist, TCS Research &  
Innovative Labs



**WEBINAR**

# Python Programming for Image Processing and Computer Vision Session 2

Zoom Meeting ID : 870 5947 9315

Password : 017238


11 am on Saturday, May 23, 2020

First 500 students logging in thro Zoom will get an  
opportunity to interact with the speaker directly.

The session will be aired LIVE on YouTube for  
the benefit of all other students.



## Mentor Profile:



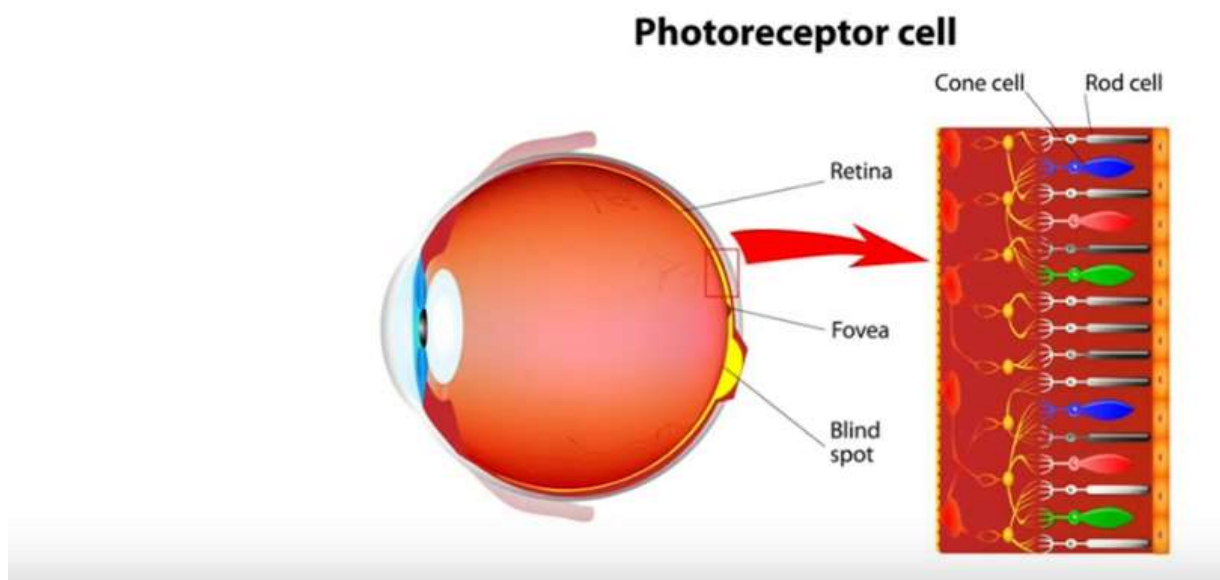
**DR. KARTHIK SEEMAKURTHY**  
**RESEARCH SCIENTIST**

- ❖ Research scientist at TCS Innovation Labs
- ❖ Ph.D (IIT Madras), M.Tech (IIT Kharagpur)
- ❖ Gate AIR 135 with 99.61%
- ❖ Research interests include Computer Vision, Image Processing (with specific focus on Turbid media analysis and Industrial automation)
- ❖ Passionate about teaching students and doing social service

**SelectSmart**  
Digital Collaborative Platform

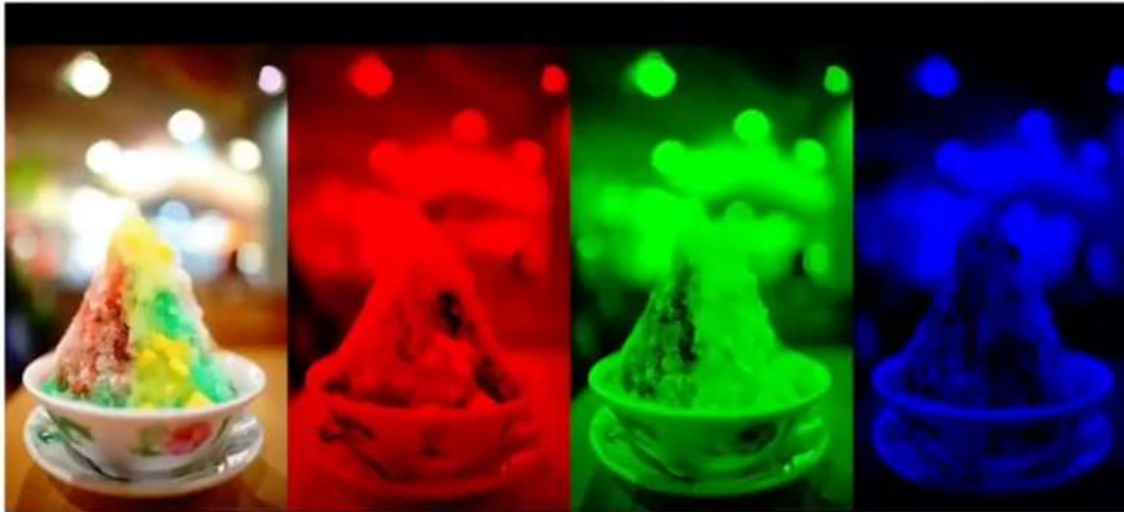
## Photo Gallery:

# Human Visual System





# Color Image



Main Conference | CVP | 1912.06992.pdf | Welcome To Colaborat... | Session3\_demo.ipynb | session5\_demo.ipynb | Session2\_demo.ipynb

colab.research.google.com/drive/1o12LOlw-Q1fstgLDIYFXRVTNZ3NH7Ang?authuser=2#scrollTo=DwiGZnrAWg-x

### Session2\_demo.ipynb

File Edit View Insert Runtime Tools Help Last edited on July 20

+ Code + Text

#### Reading and writing grayscale image

```
import cv2 #OpenCV libraries #include<stdio.h>
import matplotlib.pyplot as plt

img = cv2.imread('cameraman.jpg', 0)

#cv2.imshow() Disabled in jupyter
print(img)
plt.imshow(img, cmap='gray')
```

```
[[156 157 157 ... 153 153 153]
 [156 157 157 ... 153 153 153]
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 [129 121 101 ... 133 130 118]
 [122 133 141 ... 133 135 112]
 [124 127 155 ... 131 125 112]]
<matplotlib.image.AxesImage at 0x7fb602e28cc0>
```