BITS Pilani
K K Birla Goa Campus

Sabre presents 5-7 FEB
quark
2016 | A COSMIC ODYSSEY

Face Detection Workshop

This 2 day workshop on Face Detection will teach you the applications involved in using the technology on electronic devices. At the end of each of the 4 workshop sessions, you will be able to apply the understanding and by the end of it, you will be able to detect your face using Raspberry Pi (credit card sized computer board).

Duration: 2 Days
Cost: 1100/- Per Person
Team/Individual : Individual
Registration Link : https://thunder6.typeform.com/to/JnHgwl

Structure and Course:

DAY 1

Introduction to Raspberry Pie	**- 1 Hour**
Hardware description of raspberry pi	
Brief specification of all the peripherals on board	

Introduction to Linux	**- 1 Hour**
Need of operating system when we can program in assembly How it works	

Some concepts overview: kernel, boatload, File System …
Difference between Open source and commercial OS.
Difference between Embedded and standard OS.

Flashing OS on to the SD card - 1 Hour
1. Using “win32 disk imager”
2. Using “NOOBS”

/*Participants will not install OS in first session because it’s not so complex but time consuming. So, they can practice it after session or at home.*\

FTP/SSH & Telnet/SSH concepts - 1 Hour
Finding IP using IP-scanner
Accessing Pi using putty

Basic commands of Linux - 1 Hour
Navigation commands
Explore commands
Commands to create new files, directory and remove them
Commands to move or copy files and folders
Some advance commands which are required in next section

Simple programs.

This is to make Participants comfortable with command line programming and revision of oops concepts.

Installing required software -- - 1 Hour
Example: WiringPi library, VNCserver.

GPIO	**- 2 Hour**
Writing shell script to control GPIO	
Use of EXPORT, UNEXPORT, IOSET, IODIR.	
Writing c program to control GPIO Using wiring pi libraries	
IR transmitter and receiver	

/*Obstacle detector modules are available. Participants will be writing program to detect obstacle and glow the LED.*\

DAY 2 :

Temperature sensor (Single Wire Communication) - 1 Hour
Participants will be writing program sense the temperature and store in the data base.

DTMF (For Interrupt) - 1 Hour
To control Pi using mobile tone

Camera : - 1 Hour
Capturing image using commands from command prompt for USB webcam.

OpenCV : - 2 Hour
Installation Procedure (all boards are with pre-installed libraries).
Overview of libraries

Basis Programs - 2 Hour
Creating Window and image.
Capturing image and processing it.
Extracting features.