

# e-Yantra Robotics Competition (eYRC 2016)

## Task0 – Navigate A Terrain

### Software Installation

This file contains instructions to install following three software/libraries:

1. Python
2. NumPy
3. OpenCV

Please follow the steps given below:

#### 1. Python

- ✓ Download Python from [here](#)
- ✓ Please ensure you download **Python 2.7.x 32-bit version only**
- ✓ Double-click the downloaded file to commence the installation. Follow the on-screen guidelines to complete the installation
- ✓ Next we have to configure the **environment variables**
  - Right-click on *My Computer*
  - Click of *Properties*
  - Click on *Advanced System Settings* to open the *System Properties* dialog box
  - Under System Properties, select *Advanced* tab
  - Click on *Environment Variables*
  - Under *System Variables*, search for variable *Path*
  - Add *C:\Python27;C:\Python27\Scripts;* at the start of the textbox
  - Click on *OK*

- ✓ In order to verify the installation of python
  - Open Command Prompt, type *python* and press Enter
  - You should see the prompt as shown in figure-1 below

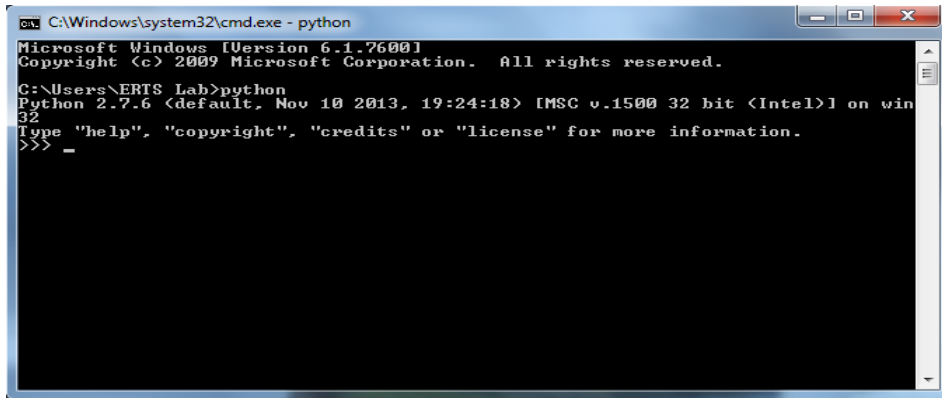
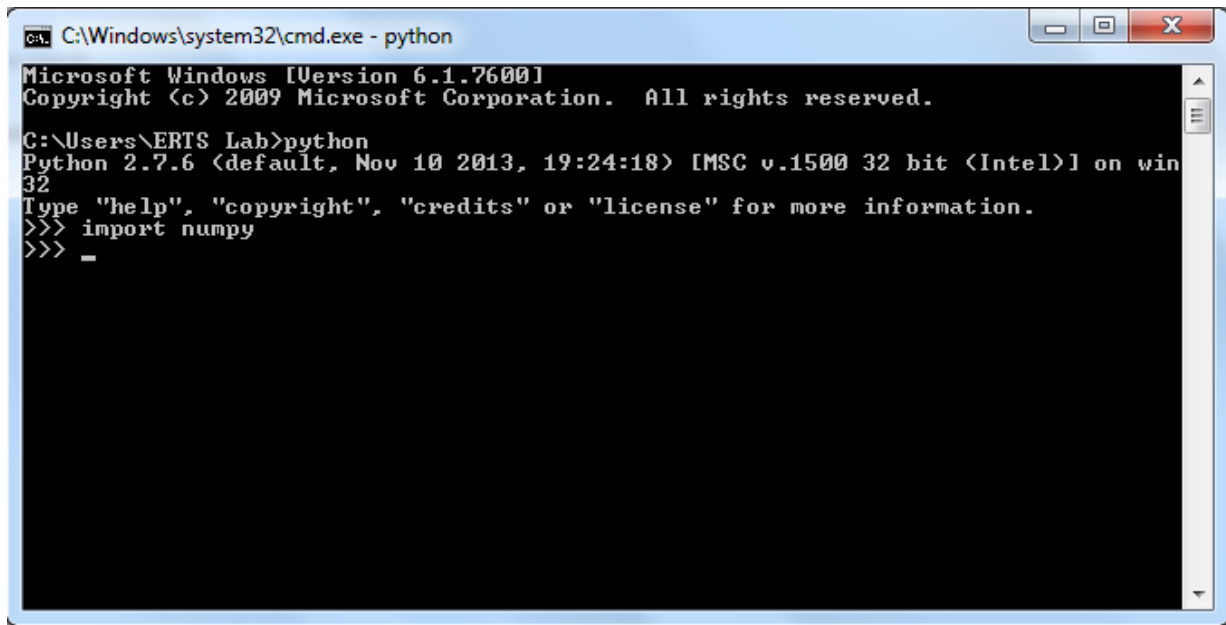


Figure-1 Command Prompt with Python running

## 2. NumPy

- ✓ Download NumPy from [here](#)
- ✓ Please ensure you download **NumPy 1.8.2 version only**
- ✓ Make sure you download **.exe file only**
- ✓ Double-click the downloaded file to commence installation
- ✓ In order to verify your installation,
  - Open Command Prompt, type *python* and press Enter. This will open python prompt
  - Type *import numpy* and press Enter
  - You should see the prompt as shown in figure-2 below



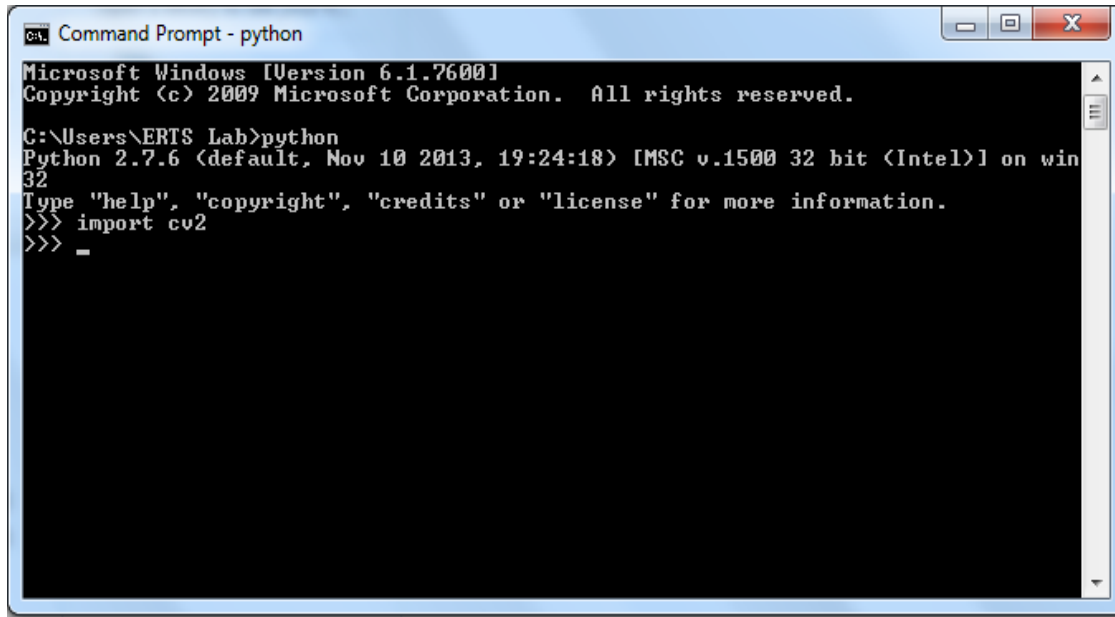
```
C:\Windows\system32\cmd.exe - python
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\ERTS Lab>python
Python 2.7.6 (default, Nov 10 2013, 19:24:18) [MSC v.1500 32 bit (Intel)] on win
32
Type "help", "copyright", "credits" or "license" for more information.
>>> import numpy
>>> _
```

Figure-2 NumPy imported in Python prompt

### 3. OpenCV

- ✓ Download OpenCV from [here](#)
- ✓ Please ensure you download **OpenCV 2.4.13 version only**
- ✓ Double-click the downloaded file to commence installation
- ✓ Navigate to the folder `opencv/build/python/2.7`
- ✓ Copy the file `cv2.pyd` to `C:/Python27/lib/site-packages`
- ✓ In order to verify your installation,
  - Open Command Prompt, type `python` and press Enter. This will open python prompt
  - Type `import cv2` and press Enter
  - You should see the prompt as shown in figure-3 below



```
Command Prompt - python
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\ERTS Lab>python
Python 2.7.6 (default, Nov 10 2013, 19:24:18) [MSC v.1500 32 bit (Intel)] on win
32
Type "help", "copyright", "credits" or "license" for more information.
>>> import cv2
>>> _
```

Figure-3 OpenCV imported in Python prompt