# Boot Camp – Siemens PLM

The main objective of this workshop is to make participants acquainted with the conceptual as well as practical knowledge of the Image processing used in Augmented Reality (AR) Technology.

The workshop will inculcate the basic fundamentals of Image processing to the participants and to provide them with an approach to develop AR applications.

The user can use one of the following OS’s

* Windows 10
* Linux (Ubuntu 14.10.4)
* Mac OS X 10.10

The steps shown below are for Windows 10 operating system

# Environment Set Up

## System requirement

## Windows 10

Minimum 8 GB RAM with 64-bit OS

## Installation setup

1. Download and install python-3.6.1.exe from <https://www.python.org/downloads>/ (or latest python 3+ version)
2. Install python numpy module -

Download “numpy‑1.13.0+mkl‑cp36‑cp36m‑win32.whl” from <http://www.lfd.uci.edu/~gohlke/pythonlibs/#numpy>

Copy it to d: folder and open command prompt in that folder. Run below command.

# pip3 install numpy‑1.13.0+mkl‑cp36‑cp36m‑win32.whl --user

1. Install python OpenCV module -

Download the OpenCV version 3.4.3 for Python 3.6 i.e. “opencv\_python‑3.4.3+contrib‑cp36‑cp36m‑win32.whl” from <http://www.lfd.uci.edu/~gohlke/pythonlibs/#opencv>

Copy it to d: folder and open command prompt in that folder. Run below command.

# pip3 install opencv\_python‑3.4.3+contrib‑cp36‑cp36m‑win32.whl –user

1. Test the installation of python and Opencv

Go to Python prompt

> python

Import cv2 module and check version

>>> import cv2

>>>print(cv2.\_\_version\_\_)

This should print Opencv version (3.4.3 in this case)

1. Installation of Jupyternotebook

# pip3 install –upgrade pip

# pip3 install jupyter

1. Test the installation of jupyter notebook

Go to command prompt

> jupyter notebook

You should see the notebook open in your browser. (http://localhost:8888)

## Optional Modules

1. Following modules will be used during workshop. Install them using “pip3 install <moduleName>” if they are missing with default python installation.

* Matplotlib
* Ipywidgets
* pylab

## Download sample examples and Data

1. Download the git repo (master.zip) from <https://github.com/darshanpv/bootCamp_2018> to your local directory (either clone or download zip)
2. Unzip the repository to your local drive. (D:\BootCamp folder)
3. Open command prompt and type

> jupyter notebook --notebook-dir='D:\workdir\Bootcamp\BootCamp\_2018'

jupyter notebook --notebook-dir=’C:\Users\8usu5c\Desktop\Bootcamp\BootCamp\_2018’

You should see the notebook open in your browser