Methodology

Before using the FPGA board and a connected camera, conventional cameraswere used for the purpose of environmental profiling. For this objective, variousenvironments were chosen. With one particular location, the camera was placed in afixed position and was made to capture the images at regular intervals. These imageswere then analysed in MATLAB and their certain parameters were calculated. Theseimage parameters comprised of brightness, hue, saturation, sharpness, and luminance.Studying these parameters and their change that result in images of varying degree ofquality helped determine the most relevant ones which can be later manipulated inpre-processing of the video stream captured by the image sensor used later.

For camera analysis we need Image Sensor OV5640, which was not available.

We searched different options and found that the image sensor in PiCamera i.e. OV5647, is similar to OV5640 in many aspects.

So, for proof of concept, we started with available resources.

But our ultimate target is OV5640, which we will hopefully get.