

## Assignment 2 – Dataset preparation Part 1

**Objective:** Build a face image dataset for two classes: Aliens vs Zombies



**Step 1: Download** 10 face images of zombies and aliens for each class, keep in separate folders. Note: Images can be in any format.

**Step 2: Read** the images from two different folders. Automate the process. Avoid mentioning the paths of the images manually. Use built in functions of popular libraries for reading images.

**Step 3: Standardize** all the images into standard square size (for example  $100 \times 100 \times 3$ ). Use the following strategies and leave the choice to users.



Original



Resized



Cropped



Filled

**Step 5: Stack** all the image data into a single array of size  $20 \times 100 \times 100 \times 3$ . Now this array is now the dataset we wanted to build.

**Step 6: Create** different variants of the dataset we created in the previous step.

- Convert all images into grey scale and create a grey scale dataset.
- Convert all images into binary image and create a binary image dataset.
- Flatten all images into 1D vector and create a dataset

**Step 7: Store** the datasets physically into disks numpy array files (in npy format) and also hdf5 format.

**Suggested Platform:** Python: Azure Notebook/Google Colab Notebook, packages such as numpy, Skimage, opencv

**Marking:** Marking is based on both **performance during the lab hours** as well as **complete submission**.