Mid-Term Report

Submitted by:

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In this project, we performed image-classification, one of the shining features of Deep Learning. We used Pytorch, which is very unique.

Organizing Data:

- Pytorch expects the data to be organized in folders divided into training, validation and testing with folders of each class.
- This organizing is done using a python script 'split.py' whish divides the given training dataset into required format of data structure. i.e.,

```
data/
    train/
        gossiping
        isolation
            .
            .
            .
            .
            .
    Valid/
        gossiping
        isolation
            .
            .
            .
            .
            .
    test/
        gossiping
        isolation
            .
            .
            .
            .
            .
```

- We prefer using GPU in the interest of faster execution, but it can also be done on CPU.
- Model is constructed using Five Convolutional layer:
  Conv-1: The First convolutional layer consists of 64 kernels of size 11*11 applied with a stride of 4 and padding of 2.
- **MaxPool-1**: The maxpool layer-1 consists of pooling size of 3*3 and stride 2.
- **Conv-2**: The second conv layer consists of 192 kernels of size 5*5 applied with a padding of 2.
- **MaxPool-2**: The maxpool-2 consists of pooling size of 3*3 and a stride of 2.
- **Conv-3**: The third conv layer consists of 384 kernels of size 3*3 applied with a stride of 1 and padding of 1.
- **Conv-4**: The fourth conv layer has the same structure as the third conv layer. It consists of 384 kernels of size 3*3 applied with a stride of 1 and padding of 1.
- **Conv-5**: The fifth conv layer consists of 256 kernels of size 3*3 applied with a stride of 1 and padding of 1.
- **MaxPool-3**: The maxpool-5 consists of pooling size of 3*3 and a stride of 2.
- This is the model and it is trained on ImageNet dataset of humans and this model is used as a pretrained model to train on cyber-bullying dataset.