fuse |
machines

Ballot Paper

Classification

DataSet Overview: Part 1

1. **In Csv file: trainset.csv**
   Nb of Columns : 2
   Label - 48 Candidates each with 200 entries
   Data - 9600 entries of Images

2. **In Csv file: testset.csv**
   Nb of Columns : 2
   Label - 48 Candidates participate
   Data - 2609 entries of Image

➢ ***Train***
- ***trainset***
  - *6009765.jpeg*
  - *.....*
  - *9067840.jpeg*
- ***trainset.csv***

➢ ***Test***
- ***testset***
  - *632755.jpeg*
  - *.....*
  - *496360.jpeg*
- ***testset.csv***

Dataset Overview: Part 2

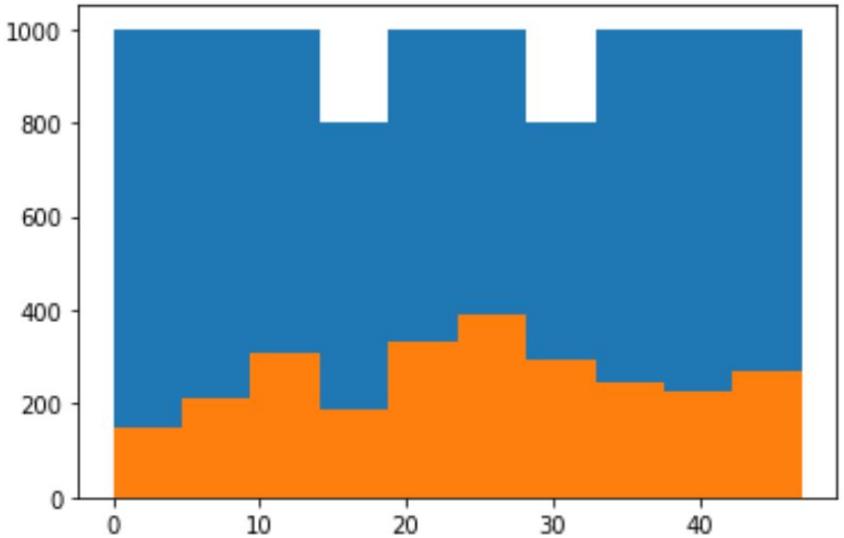
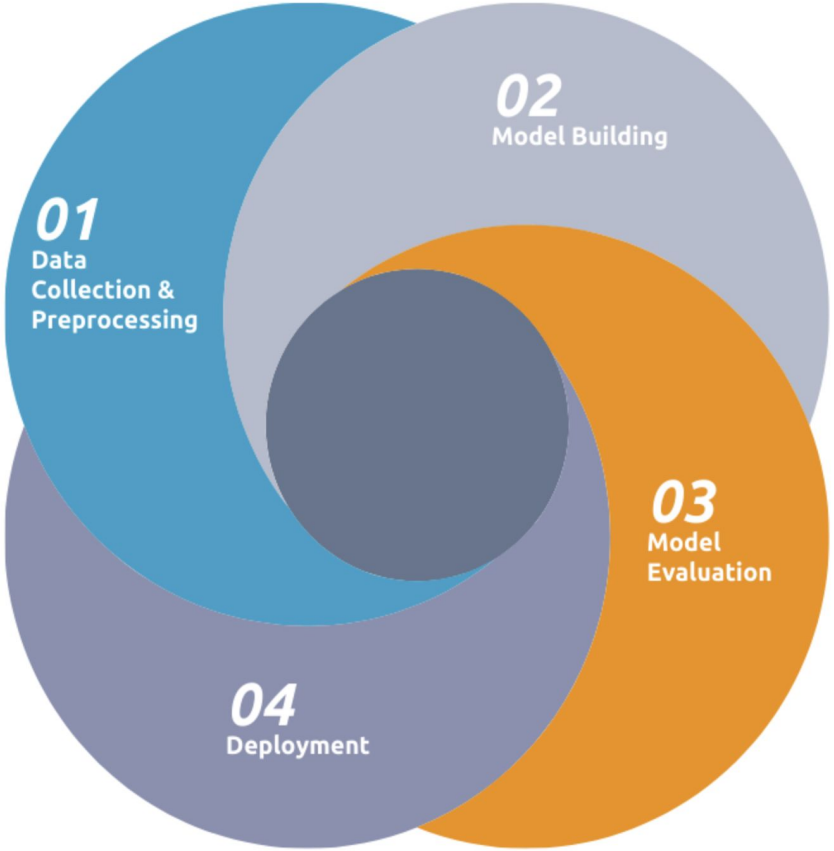


Fig1: Label Frequency in train vs test set

Fig2: Sample_Image

Workflow of System

- ***Image Pre-processing***(Keras Preprocessing)
- ***Model Building***(Pretrained model used)
- ***Model Evaluation***(Accuracy, Confusion Matrix)
- ***Deployment***- Future Work



Preprocessing & Feature Extraction

- **Fine Tuning Models**
  - Using pretrained weights to fine tune on the dataset
  - Should increase the accuracy and training speed

Model Evaluation : Performace & Accuracy

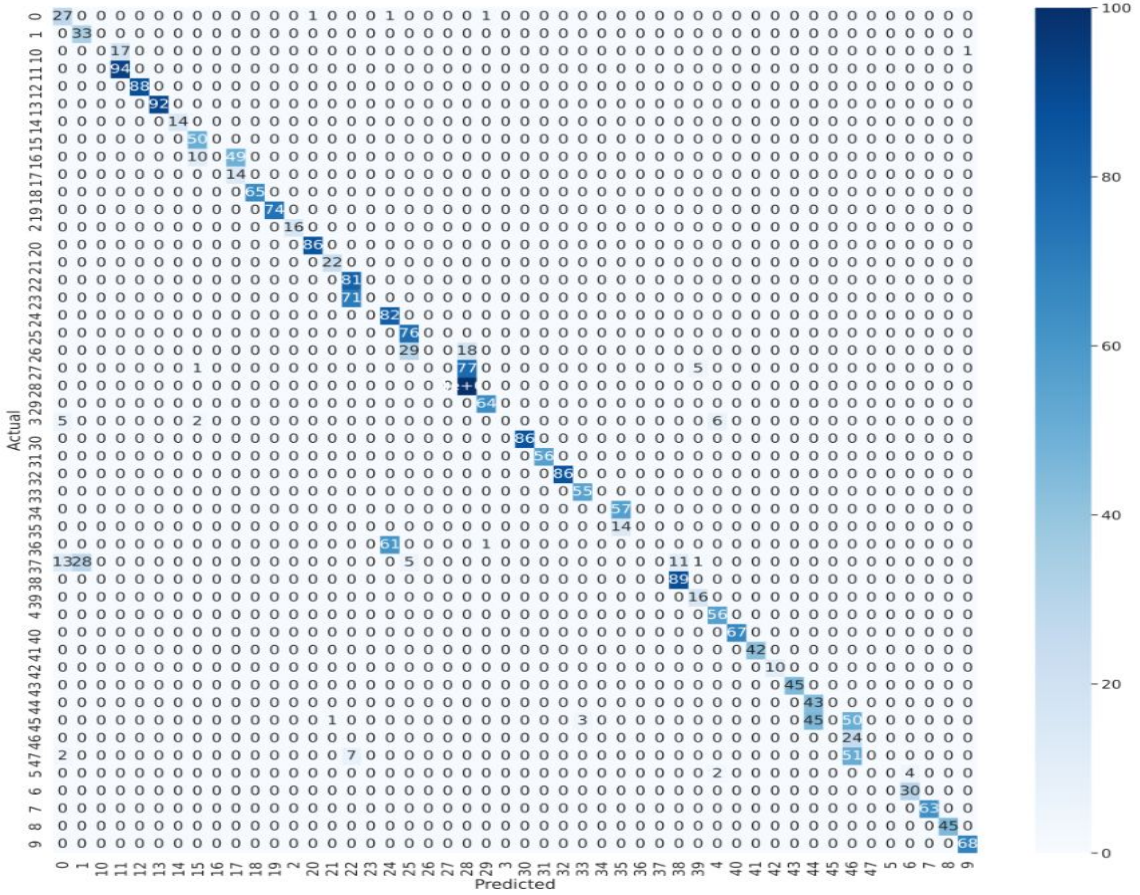
Using Resnet18/VGG16:

- Slow training time
- Poor performance

S.N	Training Accuracy	Testing Accuracy	Validation Accuracy	Nb of Epoch
VGG16	2.3%	--	1.82%	10
Resnet18	12.3%	--	8.2%	50
MobileNet	99%	76%	0%	5

Table: Accuracy comparison

Model Evaluation : Confusion Matrix (MobileNet)



Further Improvements: Next Steps

1. Increasing Model Performance
2. Generate Loss/acc Plot
3. API & Database