

## MIDSEM EXAM REPORT

### Abhishek Maiti 2016005

Model.py has the code for the model.

After tuning the parameter for  $\lambda$ . We got Average NMAEs as follows for the following for 100 iterations for each fold.

**Lambda** - Avg. NMAE Over 5 folds

| <b>Lambda</b> | <b>Avg. NMAE over 5 folds</b> |
|---------------|-------------------------------|
| <b>0.2</b>    | <b>0.7</b>                    |
| <b>0.5</b>    | <b>0.63</b>                   |
| <b>1</b>      | <b>0.54</b>                   |
| <b>2</b>      | <b>0.42</b>                   |
| <b>3</b>      | <b>0.35</b>                   |

#### Per Fold Error for each lambda

**0.2** - 0.70

(Per fold Error [0.71257250972096375, 0.70761480540990151, 0.70116671517929507, 0.70118825317304589, 0.70405060198191882])

**0.5** - 0.63 (Per fold Error - [0.64773528098873212, 0.63502124535562465, 0.62614730435885346, 0.62663501649078157, 0.63370920858099222])

**1** - 0.54 (Per fold - [0.55908172346745399, 0.53805167228952988, 0.52626950032055997, 0.53022691089911, 0.54209006193086307])

**3** - 0.35 (Per Fold - [0.37147637777094167, 0.34820979404448399, 0.33839159927692286, 0.34332006493493894, 0.3609724306010938])

**2 - 0.42** (Per Fold - [0.44135673362505895, 0.41573718796331521, 0.40442919803625854, 0.40832207002592269, 0.4256319310614784])

**For the best Lambda i.e. lambda = 3**

| Fold | Error |
|------|-------|
| 1    | 0.371 |
| 2    | 0.348 |
| 3    | 0.338 |
| 4    | 0.343 |
| 5    | 0.360 |