WEEK 5
COUNTING IN DENSE CROWDS USING DEEP LEARNING

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LAST WEEK

- Created Main Script for Experiment
- Trained SVM Classifier
- Began Testing Data
- Obtained a Different Version of Previous Code
  - (V 09 Counting Code)

CURRENT PROGRESS

5-FOLD VALIDATION SETTING

- Shifted to working in a 5 fold validation setting
- Generated all the kernels for this setting using the features that were extracted from the images
- Trained an SVM classifier
- Obtained results by testing the model



```
optimization finished, #iter = 7481
nu = 1.000000
obj = -85357673998.003830, rho = 12760.269173
nSV = 14602, nBSV = 14602
Mean squared error = 6.33401e+14 (regression)
Squared correlation coefficient = 0.000162625 (regression)
.......*
optimization finished, #iter = 7875
nu = 0.999935
obj = -69048230354.119125, rho = -14801.454991
nSV = 15400, nBSV = 15400
Mean squared error = 1.9834e+16 (regression)
Squared correlation coefficient = 3.20053e-05 (regression)
.......*
optimization finished, #iter = 7844
nu = 0.999935
obj = -70535624385.546936, rho = -9093.284358
nSV = 15398, nBSV = 15398
Mean squared error = 1.65976e+16 (regression)
Squared correlation coefficient = 0.000615546 (regression)
```

ERRORS & CHALLENGES

- Very large error values for mean-squared error
- Presently analyzing code and variables to find any errors
- Attempting different changes to see any improvement

OTHER METHODS

- Also attempting to change the kernel values for LibSVM
  - Tweaking parameters –e from 1 to 0.01
- Previous method:
  - L2 Normalization -> Compute Kernels -> train SVM
  - L1 Normalization -> Generate Homogenous Kernels -> L2 Normalization -> train SVM
    - Meaningful results

NEXT STEPS

- Fix Errors & Test SVM classifier again
- Start working with Fisher Vectors
- Begin researching and working on videos