Report Meeting Week 4

Benjamin Mears

- Week's Progress
- Preliminary Results
- Where to next?
Week's Progress

- Basic system up and running
  - Harris-Laplace detector with Sift feature descriptors
  - Baseline results
- Code to make ROC curves
- Began experimenting with SVM code in Matlab
- Comparison of basic SVM vs Logistic regression
Boat_Ship

ROC Curve

True Positive

False Positive

0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1

0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1
Person Playing Soccer

ROC Curve

True Positive

False Positive
# SVM Vs Logistic Regression

<table>
<thead>
<tr>
<th></th>
<th>SVM</th>
<th>Logistic Regression</th>
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<tbody>
<tr>
<td></td>
<td>True Positive</td>
<td>False Positive</td>
<td>True Positive</td>
</tr>
<tr>
<td>Boat_Ship</td>
<td>73.0%</td>
<td>20.0%</td>
<td>70.0%</td>
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<tr>
<td>Airplane Flying</td>
<td>66.7%</td>
<td>13.3%</td>
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<tr>
<td>Nighttime</td>
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<td>Cityscape</td>
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<tr>
<td>Bridge</td>
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<tr>
<td>Person Playing Soccer</td>
<td>66.7%</td>
<td>16.7%</td>
<td>73.3%</td>
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Where To Next?

- Ben-SVM
- Sean-Regularization & different features/sampling
- Silvino-Bootstrapping
Next Week's Goal Plans

- Run trials on a larger portion of data set
- Document results for all features
- Begin experimenting with different SVM kernels
  - Read up more on SVM
  - Implement Histogram Intersection Kernel
- Compare old results to new results
Still to explore:

- Incorporating motion
  - Person-in-act-of-sitting down
  - Person-riding-bicycle
- Extracting keyframes
  - Constant Interval vs keyframes of interest
- Dealing with small number of positive examples
  - Duplicate positive examples?