Report Meeting Week 3

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-What is TrecVid

-Where we are at

-Where we are going

-Goals

What Is TrecVid

-'To encourage research in information retrieval by providing a large test collection, uniform scoring procedures, and a forum for organizations interested in comparing their results'--TrecVid Website

-Multiple Tasks:

  -Surveillance event detection

  -Search

  -Content-based copy detection

  -**High-level feature extraction**

High Level Feature Extraction Task

-'Participants will return for each feature the list of at most 2000 shot IDs from the test collection, ranked according to the highest possibility of detecting the presence of the feature. '--TrecVid Website

The Features...

Classroom

Chair

Infant

Traffic Intersection

Doorway

Airplane_flying

Boat_Ship

Singing

Bus

Cityscape

Telephone

Hand

Person Eating

Nighttime

People-dancing

Person-eating

The Features Cont...

Person-applauding

Female_human_face_closeup

Person Playing Soccer

Person-ridign-a-bicycle

Demonstration_Or_Protest

Person_playing_a_musical_instrument

The Features Cont...

Features range from 'easy' to detect:

To not so easy:

Our Approach

-Will be using bag-of-words along with logistic regression to create classifiers

Where we are at

-Jason has put together Perl and Matlab scripts to:

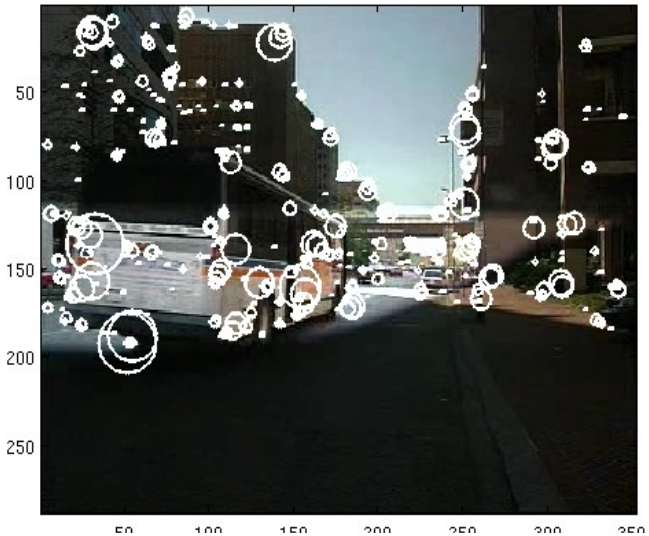
1) Extract positive and negative images for each feature

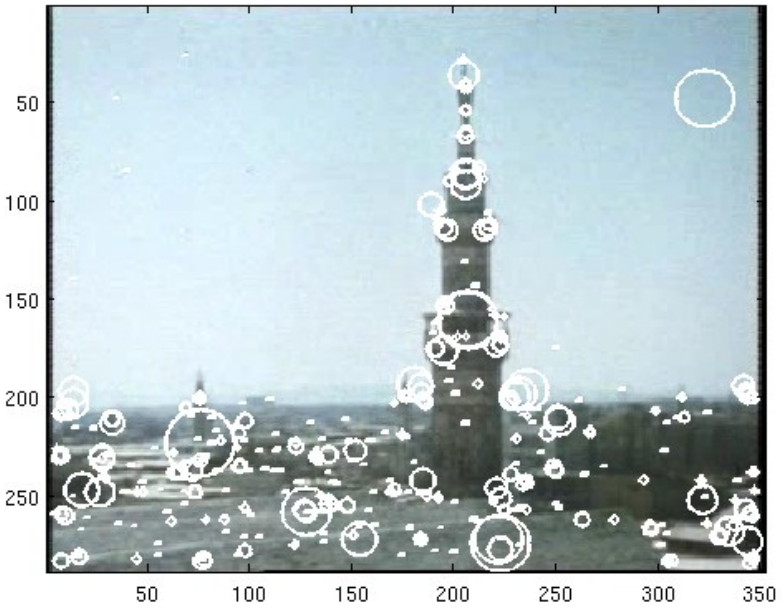
2) Compute feature vectors (using a Harris LaPlace detector to choose points and SIFT for the features) for each using an executable provided by Koen van de Sande (University of Amsterdam)

3) Create the codewords by clustering using K-Means

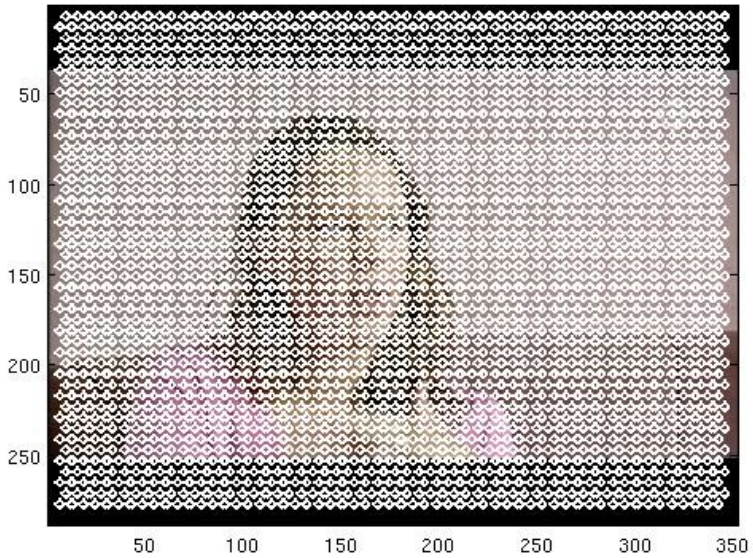
4) Create a histogram of codewords for each image

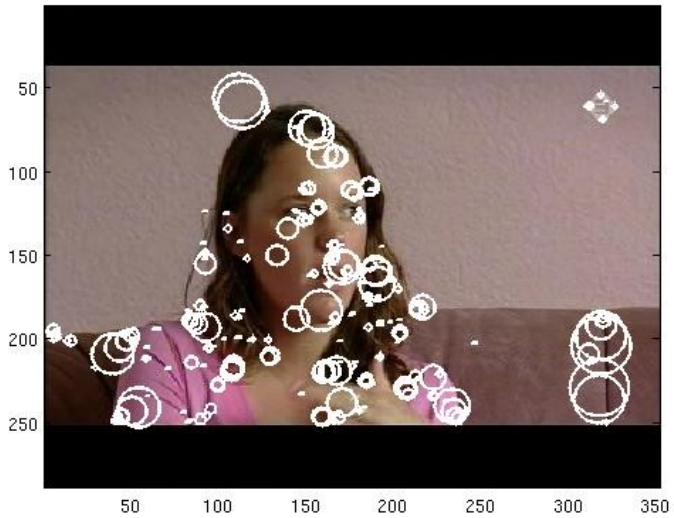
Harris LaPlace Detector





Dense Sampling Vs Harris LaPlace





Where We Are At

-This week, we implemented logistic regression to get classifiers for each image. The logistic regression is run on an augmented histogram (using thresholds for each codeword)

-Lots of preliminary set-up work!

Plan/Goals

-By the end of next week, get a basic system up and running to get preliminary results

-Once we get preliminary results, begin incremental improvements to the system

-Bootstrapping

-Motion/Optical Flow

-Different interest point detectors/thresholds

  -Dense point sampling

  -Code allows us to use own detector

-Different features (14 to choose from)

-Continue Annotating