Computing New Positives

- OpenCv code to generate slightly altered positives
- Apply filters to positive images
- Code to extract on the fly or precompute new positives
Optical Flow

- Review:
  - Compute optical flow between keyframe and following frame
  - X-component → R
  - Y-component → G
  - Magnitude → B
  - Compute Sift features
X-Component
Y-Component
Magnitude
Considerations

- Compute Optic Flow between how many slides?
- How best to normalize between 0 and 255?
- Different algorithms
  - Have tried Horn-Schunck, Lukas Kanade (w/ and w/o pyramids) and Brox
The Algorithm

- Gabor filters for local pixel information
  - Phase difference close to zero indicates a possible match
- Incorporate neighborhood information through connected components approach
- Also sample different 'slants'

Today/This Weekend/Next Week

- Run optical flow code on all the keyframes
- Compute SIFT features
- Explore best way to incorporate new features into our system
  - Investigate ideas presented in "Let the Kernel Figure it Out: Principled Learning of Pre-processing for Kernel Classifiers"