Machine Learning

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Literature Survey

1. Literature Survey
   - Learn From Movies
   - Object Detection and Text Mining
   - Unsupervised Activity Detection
2. Direction of Project
   - This Semester Work

Learning Realistic Human Actions from Movies

Ivan Laptev et al.

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- Timing Information

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  - From Subtitles to Scripts

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  - HoG and HoF features

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- SVM

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1. Previous Attempts in Simplified Settings

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2. Supervised Learning

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1. Previous Attempts in Simplified Settings
2. Supervised Learning
3. Possible to Work with Long Videos / Movies

Improving Video Activity Recognition

Using Object Recognition and Text Mining. Tanvi S. Motwani and Raymond J. Mooney

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- Initial Probability Distribution
  - From STIPs, HoG and HoF, form Vocabulary
  - Train a Standard Video based Activity Classifier

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Now,

- Detect Objects

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- Correlations between Activities and Objects

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- Initial Probabilities vs Combined Probabities

Latent Topic Model-Based Group Activity Discovery

T.A. Faruquie, S. Banerjee, P. Kalra

- Form Vocabulary

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- Find Distribution of an Activity over Clips

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- Form Vocabulary
- Find Distribution of an Activity over Clips
- Activities having Similar Distributions are Group Activities

Idea of This Semester Work

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The Best way to have a good idea is to have many ideas.
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1. Object Detection using Scene Information

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2. Use Text to Detect Objects

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1. Object Detection using Scene Information
2. Use Text to Detect Objects
3. Improve Object Detector Using Feedback

References I

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Improving Video Activity Recognition Using Object Recognition and Text Mining
Tanvi S. Motwani and Raymond J. Mooney *Proc. ECAI-2012*.

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T.A. Faruquie, S. Banerjee, P. Kalra *Vis Comput (2011) 27:1071-1082*.