Week 3

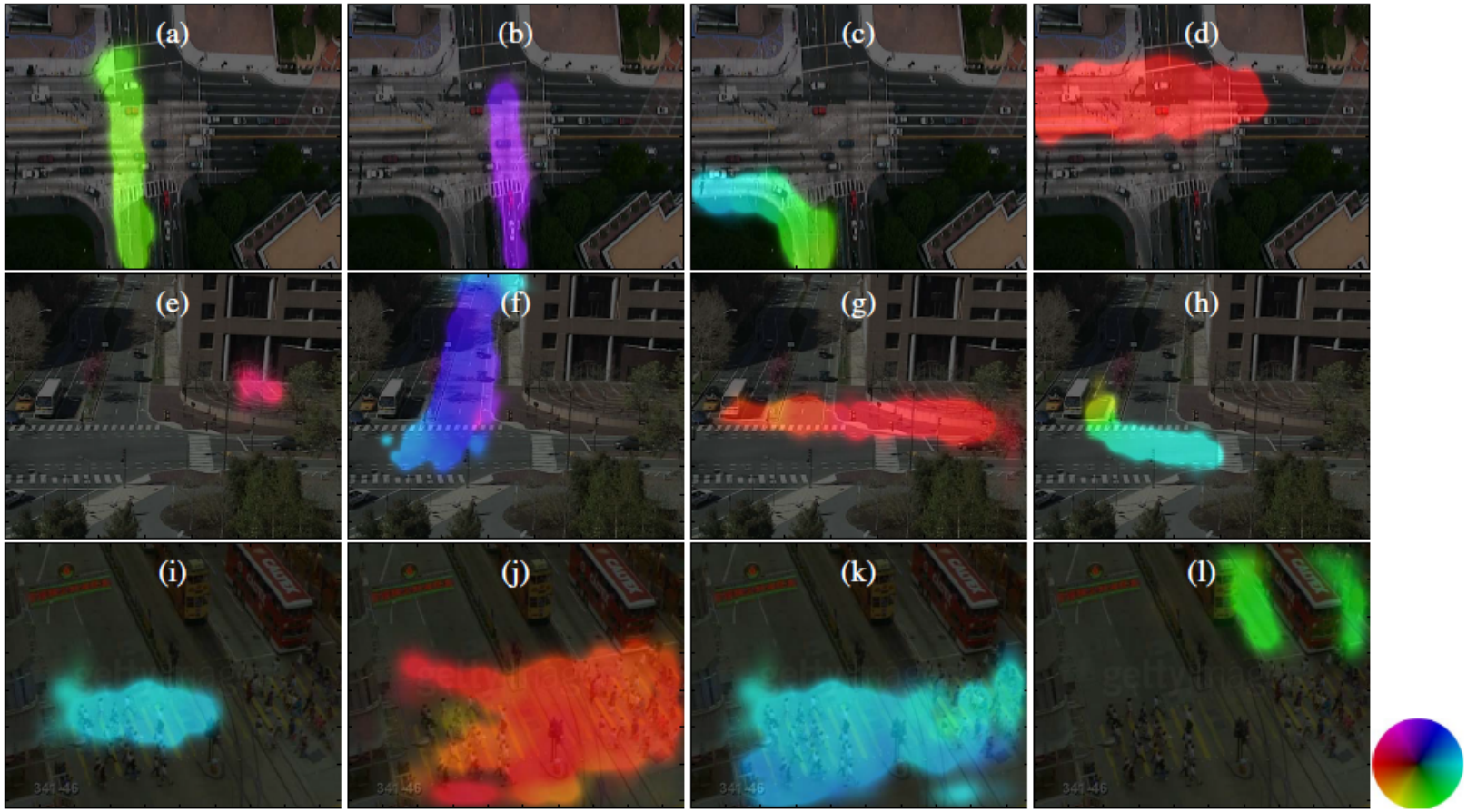
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Motion Models

Motion models from computer vision.



First Method

Scene Understanding by Statistical Modeling of Motion Patterns. CVPR 2010.

- Split video into short clips
- Compute optical flow on each clip
- Cluster data points to make Gaussians
- Use reachability and temporal locality to join Gaussians and make instances of motion patterns
- Use KL divergence to group instances into motion patterns

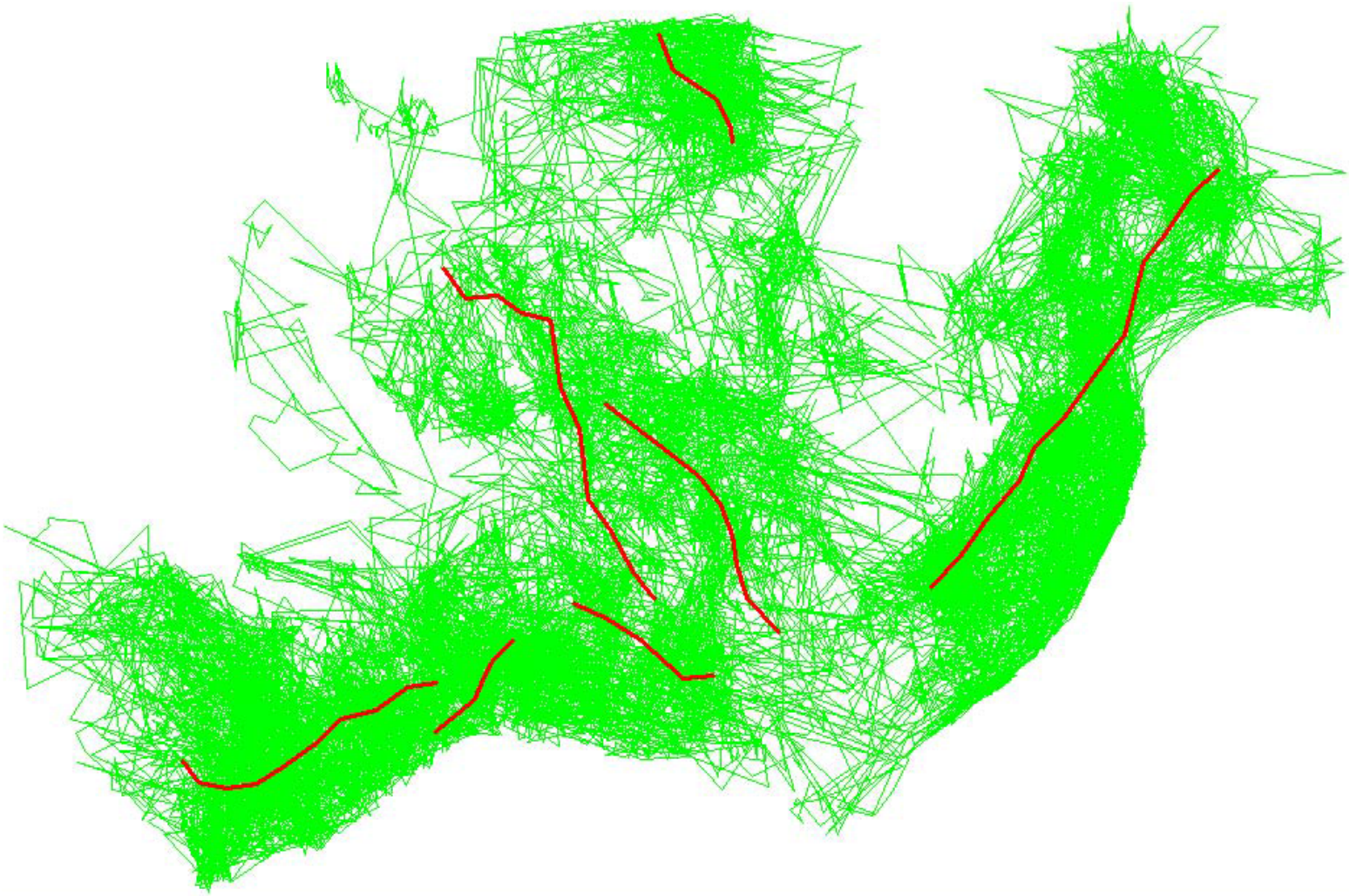
Second Method

Similarity Invariant Classification of Events by KL Divergence Minimization. ICCV 2011.

- Split video into short clips
- Computer optical flow on each clip
- Cluster data points to make Gaussians
- Group Gaussians by weighted squared Mahalanobis distance to make motion patterns

Data mining trajectory clustering

Find trends in trajectory data.



Implementation and Application of motion models

- Gather and read data mining trajectory clustering papers to find commonly used data sets and state-of-the-art algorithms to use and compare against.
- Modify and implement motion models to discover motion patterns in trajectory data sets.