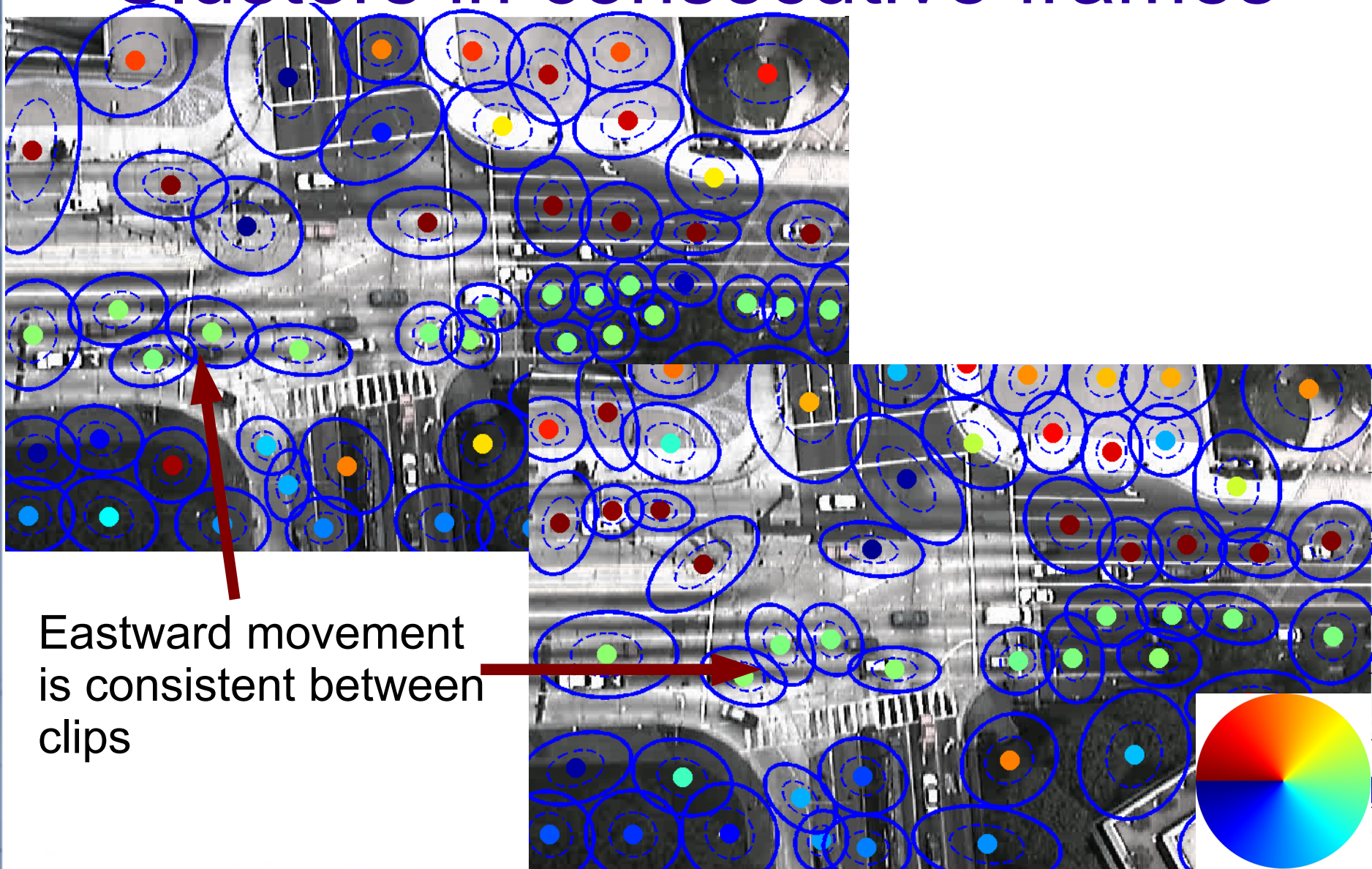# REU Week 9

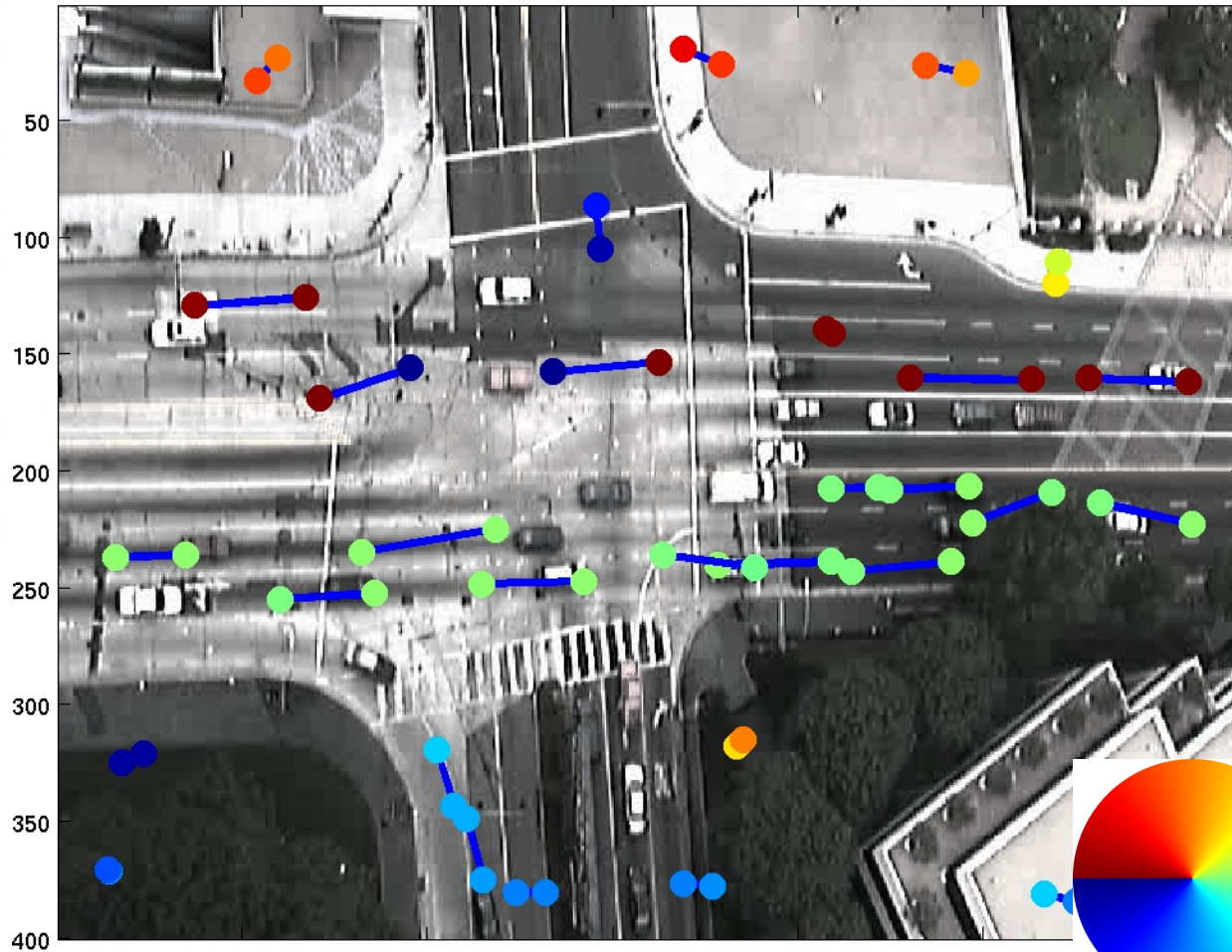# Scene Motion Patterns from Optical Flow

Lance Hartung

Overview

- Last week:

  – Clustered optical flow from time clips

  – GMM is a meaningful representation of motion in a clip

- This week:

  – How clusters change between time clips

Clusters in consecutive frames

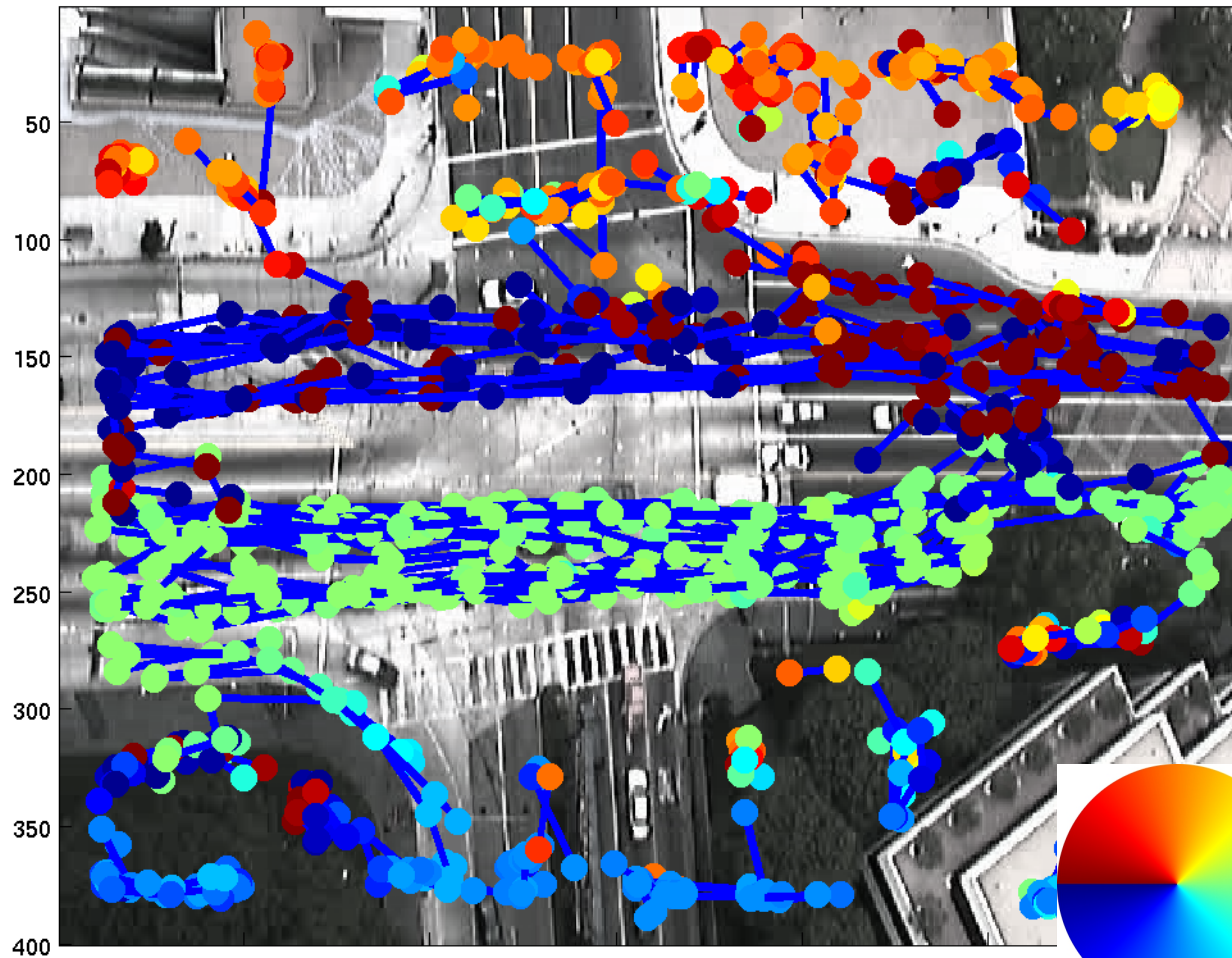Eastward movement is consistent between clips
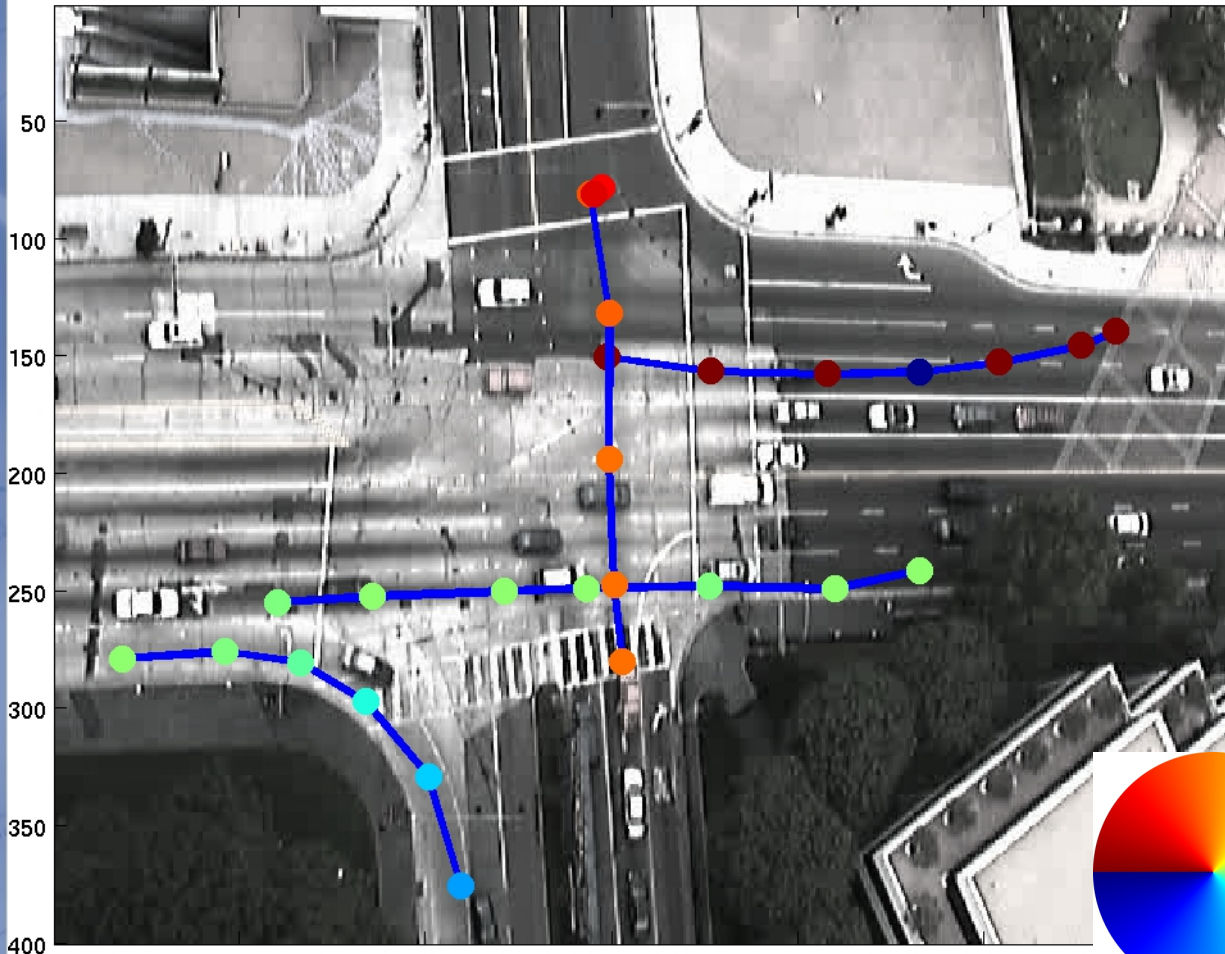
Linking

- Link clusters from clip 1 to clusters in clip 2

- Use the consistency constraint

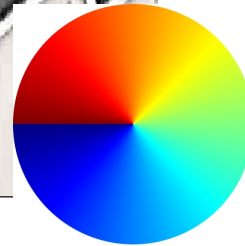- Image shows cluster centers from both clips

Linking

- Links over 30 time clips

- Many similar chains in areas with a motion pattern
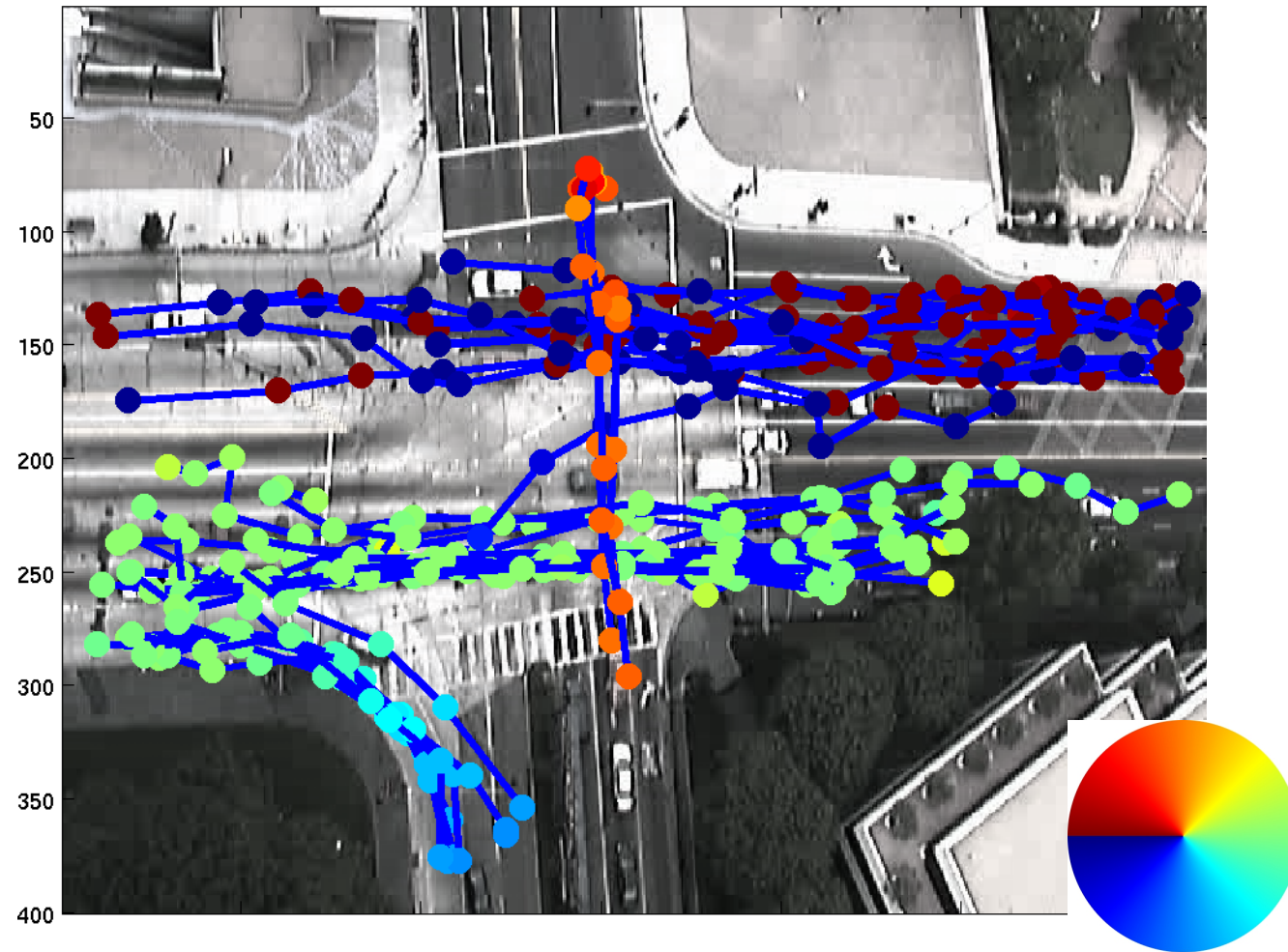
- Can we extract just those ones?

Finding patterns

- Four chains of interest (hand-picked)

- Search clusters from 300 clips for similar chains

- Using KLD as distance metric

Results

In progress

- Finding the patterns automatically
  - Another clustering problem
- Fix the linking algorithm
  - Some erratic results