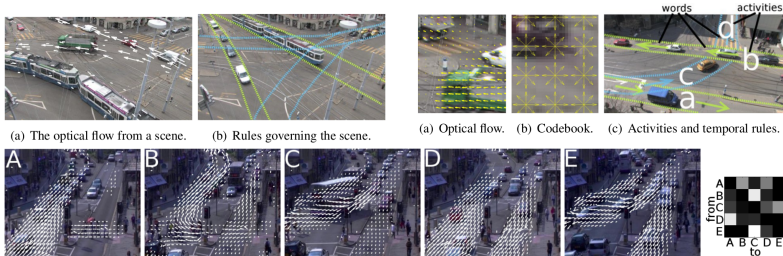


# Whats going on?

## Discovering Spatio-Temporal Dependencies in Dynamic Scenes

D. Kuettel, M. D. Breitenstein, L. V. Gool, and V. Ferrari (CVPR 2010)



- ▶ Learning spatio-temporal dependencies of moving agents in complex dynamic scenes  
What are the typical actions in the scene? How do they relate to each other? What are the rules governing the scene?
- ▶ Motivation: modelling
  - ▶ correlated behaviours of multiple agents rather than independent agents
  - ▶ spatial and temporal dependencies jointly
- ▶ Local temporal rules: learning sequences of activities using Hierarchical Dirichlet Processes (HDP)
- ▶ Global temporal rules: jointly learning co-occurring activities and their time dependencies using an arbitrary number of HMMs in HDP
- ▶ Datasets: two videos of three hours in Zurich and two shorter videos of London