Video Understanding in Distributed Active Camera Networks

Our group is working on a number of problems on scene analysis in camera networks. The following are main research thrusts:

- Cooperative control of camera networks using game theory [1].

- Distributed tracking using Kalman-Consensus filters [1].

- Long-term tracking in non-overlapping camera networks using multi-objective optimization [2].

- Activity recognition in camera networks.

- Camera network scheduling.

- Pose and illumination invariant tracking and object recognition [4].

References:

[1] Distributed Multi-Target Tracking In A Self-Configuring Camera Network, C. Soto, B. Song, A. Roy-Chowdhury, IEEE Conf. on Computer Vision and Pattern Recognition, 2009.

[2] Stochastic Adaptive Tracking In A Camera Network, B. Song, A. Roy-Chowdhury, IEEE Intl. Conf. on Computer Vision, 2007.

[3] Closed-loop Tracking and Change Detection in Multi-Activity Sequences, B. Song, N. Vaswani, A. Roy-Chowdhury, IEEE Computer Vision and Pattern Recognition, 2007.

[4] Inverse Compositional Estimation of 3D Pose And Lighting in Dynamic Scenes, Y. Xu and A. Roy-Chowdhury, IEEE Trans. on Pattern Analysis and Machine Intelligence, July 2008.