

# **Scene Analysis, Control and Communication in Distributed Camera Networks**

Bi Song

Department of Electrical Engineering  
University of California, Riverside

As networks of video cameras are being installed in many applications, modeling and inference strategies in video networks have captured more and more interest. There are many challenge problems, such as (i) traditional computer vision challenges in tracking and recognition, robustness to pose, illumination, occlusion, clutter; recognition of objects and activities; (ii) aggregating local information to obtain stable, long-term tracks of objects; (iii) cooperative camera control algorithms for multi-resolution target acquisition; (iv) distributed processing and scene analysis and (v) communication in distributed manner. The overall aim of our work is to study the core issues in network-centric processing, control and communication in a multi-camera network, including frameworks for tracking people in video through changes of activities; tracking in a non-overlapping camera network; decentralized control and tracking in a camera network; and distributed video compression.