Abstract:
Robust visual tracking is very difficult due to a number of reasons including the presence of occlusion, fast camera motion, low-resolution image capture, varying viewpoints and illumination changes. To address these problems, we propose two novel methods based on particle filter. The first one is for multi-object tracking in our sports system, which improves object tracking by use of both object appearance information in the image domain and cross-domain contextual information in the field domain. For the second one, we propose a Multi-Task Tracking (MTT) method to consider the correlations among particles, which consistently outperforms state-of-the-art trackers.

Biosketch:
Tianzhu Zhang is a postdoctoral fellow at the Advanced Digital Sciences Center (ADSC), Singapore. He received his Bachelor's degree in communications and information technology from Beijing Institute of Technology, Beijing, in 2006. Then, he obtained his Ph.D. in pattern recognition and intelligent system from Institute of Automation, Chinese Academy of Sciences, Beijing, in 2011. He does extensive research on computer vision and multimedia, such as action recognition, video surveillance, image annotation, and object tracking.