

KEYNOTE TALK  
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## **Future Generation Object Detection and Tracking Systems**

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### **Abstract**

It would not be unfair to state that object detection and tracking, as our eyes do so innately, are among the most challenging tasks in computer vision. In general, natural objects belong to same class exhibit a large variance in their appearance. Besides, varying imaging conditions, partial occlusions, non-rigid shape deformations, multifaceted profiles and insufficient image resolutions make the detection more difficult. Similarly, a tracked object may undergo severe appearance transformations, suddenly change its motion, become fully occluded, congregate into a group of identical objects, etc. Traditional approaches tend to address these issues separately, often out of context by aiming for fixed generic solutions. Recently, there is push towards making use of any useful bit of information embedded in priori and contextual cues. More systems seek to provide online adaptation to local conditions. In this talk, various aspects of the conventional and contextual object detection and tracking methods will be dissected and how they will evolve the future systems will be examined.



**Speaker Bio-Sketch:** Fatih Porikli is a principal technical staff at Mitsubishi Electric Research Labs (MERL), Cambridge, USA. He received his PhD specializing in video object segmentation from Polytechnic University, NY. Before joining MERL in 2000, he developed aerial image analysis applications at Hughes Research Labs, CA in 1999, and designed 3D-stereoscopic systems at AT&T Research Labs, NJ in 1997. His research includes computer vision, online learning and classification, robust optimization, multimedia processing and video mining with many commercial applications ranging from surveillance to intelligent transportation systems. He received the R&D 100 Scientist of the Year Award in 2006. He won the second best paper award at IEEE International Conference on Computer Vision and Pattern Recognition, 2007. He authored over 60 technical publications and applied for over 50 patents. He is serving as an associate editor for the IEEE Journal of Machine Vision Applications, EURASIP Journal of IVP, and Elsevier Journal of Real-Time Imaging. He is a senior IEEE, ACM, SPIE member.