



Seminar Series Computer Science



Motion Analysis: from Wide Area Aerial Video Surveillance to Microscopy Imaging

Dr. Filiz Bunyak, UM-Columbia

Oct 15th Tuesday, 12:30 to 1:30pm

209 Comp. Sci. Bldg.

Abstract - Recent developments in sensor technologies, digital imaging and computer power have transformed the early efforts in many image/video analysis applications. Of particular interest to our group are persistent aerial surveillance which is an emerging technology that can provide continuous, wide-area coverage from an aircraft-based multiple-camera system and high-throughput high-resolution microscopy imaging that have resulted in an explosion of imagery data that needs to be processed and analyzed.

This talk will focus on many challenges of motion analysis in these two fields, motivations, some common and some unique features, and our approaches to detect, track, and analyze moving objects of varying types in different image modalities and applications. The talk will be concluded with the description of MyxoTracker our work on segmentation and long-term tracking of thousands of densely clustered individual bacteria that enables objective analysis and quantification of high-throughput image-based assays of *Myxococcus xanthus* for the study of diverse biological pathways.

Brief Bio - Filiz Bunyak Ersoy is an Assistant Research Professor of Computer Science at University of Missouri-Columbia. Her research interests include image processing, computer vision and pattern recognition with emphasis on biomedical image analysis, aerial and wide-area surveillance, visual tracking, data fusion, segmentation and level set methods. Dr. Bunyak received her B.S. and M.S. degrees in Control and Computer Engineering from Istanbul Technical University, Turkey and her Ph.D. degree in Computer Science from University of Missouri-Rolla.