

# Joint IEEE Int'l Workshop on Object Tracking and Classification Beyond the Visible Spectrum <sup>1</sup> (OTCBVS' 05)

San Diego, CA JUN 20, 2005 Sponsors: Delphi, US-Army SMDC, IEEE

## Final Program

### Opening session

#### 8:00-8:15 Opening Remarks:

**Riad I. Hammoud**, WS chair, *Delphi Electronics and Safety*,  
**Robert McMillan**, WS co-chair, *US Army Space & Missile Defense Command*,  
**James W. Davis**, Benchmark and Website chair, *Ohio State University*

#### 8:20-9:20 Keynote Talk:

**Mohan M. Trivedi**, Observing Humans in Smart Spaces: A Multi Perspective and Multi Modal Approach, *University of California at San Diego*

### Background Estimation and Modeling

Chair: Riad I. Hammoud, Robert McMillan

#### 09:25-09:45 Background Estimation under Rapid Gain Change in Thermal Imagery,

**Hulya Yalcin, Robert Collins and Martial Hebert**,  
*Carnegie Mellon University, and Penn State University, Pittsburgh, PA, USA*

#### 09:50-10:10 Fusion-Based Background-Subtraction using Contour Saliency,

**James W. Davis and Vinay Sharma**,  
*Ohio State University, Columbus OH, USA*

#### 10:10-10:30 ————— - Coffee break —————

### Target Detection and Tracking Beyond the Visible Spectrum

Chair: Ioannis Pavlidis

#### 10:30-10:50 Layered Representation for Pedestrian Detection and Tracking in Infrared Imagery,

**Congxia Dai, Yunfei Zheng and Xin Li**,  
*West Virginia University, Morgantown, USA*

#### 10:50-11:10 Kernel Matched Signal Detectors for Hyperspectral Target Detection,

**Heesung Kwon and Nasser M. Nasrabadi**,  
*U.S. Army Research Lab., Adelphi, MD, USA*

#### 11:10-11:30 Improved Likelihood Function in Particle-based IR Eye Tracking,

**Dan Witzner Hansen, Riad Hammoud, Ronald Satria and Jakob Sorensen**,  
*IT University, Copenhagen, and Delphi Electronics and Safety, USA*

#### 11:30-11:50 Tracking Humans using Multi-modal Fusion,

**Xiaotao Zou and Bir Bhanu**,  
*University of California, Riverside, CA, USA*

<sup>1</sup>In conjunction with IEEE Conference on Computer Vision and Pattern Recognition, CVPR 2005

11:50-01:30 ———- Lunch break ———-

## Poster session

Chair: Besma Abidi

- 01:20-02:00** Human Activity Recognition in Thermal Infrared Imagery,  
**Ju Han and Bir Bhanu,**  
*University of California, Riverside, California, USA*
- 01:20-02:00** Multi-View Classifier Swarms for Pedestrian Detection and Tracking, **Payam Saisan, Swarup Medasani and Yuri Owechko,**  
*University of California, Los Angeles, and HRL Laboratories, CA, USA*
- 01:20-02:00** Multi-Frame Moving Object Track Matching Based on an Incremental Major Color Spectrum Histogram Matching Algorithm,  
**Massimo Piccardi and Eric Dahai Cheng,**  
*University of Technology, Sydney (UTS), Australia*
- 01:20-02:00** Background Modeling in Infrared and Visible Spectrum Video for People Tracking,  
**C. Conaire, E. Cooke, N. O'Connor, N. Murphy and A. Smeaton,**  
*Dublin City University, Ireland*
- 01:20-02:00** Real Time Robust Human Detection and Tracking System,  
**Jianpeng Zhou and Jack Hoang,**  
*I3DVR International Inc, Scarborough, Ontario, Canada*
- 01:20-02:00** Human Extraction in Indoor Environments Using a Concurrence Background Model and a Silhouette HMM,  
**San-Lung Zhao and Hsi-Jian Lee**

## Signal and Video-Based Surveillance

Chair: Nasser Nasrabadi

- 02:00-02:20** Integrating LDV Audio and IR Video for Remote Multimodal Surveillance,  
**Zhigang Zhu, Weihong Li, and George Wolberg,**  
*The City University of New York, New York, USA*
- 02:20-02:40** Spaceborne Traffic Monitoring with Dual Channel Synthetic Aperture Radar: Theory and Experiments,  
**Stefan Hinzz, Franz Meyery, Andreas Laikaz, and Richard Bamler,**  
*Remote Sensing Technology, and Remote Sensing Technology Institute, German Aerospace Center, Germany*
- 02:40-03:00** A Combinational Approach to the Fusion, De-noising and Enhancement of Dual-Energy X-Ray Luggage Images,  
**Zhiyu Chen, Yue Zheng, Besma R. Abidi, David L. Page, and Mongi A. Abidi,**  
*University of Tennessee, Knoxville, TN, USA*
- 03:00-30:20** ———- Coffee break ———-

## Vision Algorithms for Automotive Applications

Chair: Riad I. Hammoud

- 03:20-03:40** Stereo Vision-based approaches for Pedestrian Detection,  
**M. Bertozzi, E. Binelli, A. Broggi, and M. Del Rose,**  
*Universit'a di Parma, Parma, ITALY, and U.S.Army TARDEC, MI, USA*

**03:40-04:00** Multiperspective Thermal IR and Video Arrays for 3D Body Tracking and Driver Activity Analysis,

**Shinko Y. Cheng, Sangho Park, and Mohan M. Trivedi,**  
*University of California, San Diego, CA, USA*

**04:00-04:20** Model-based validation approaches and matching techniques for automotive vision based pedestrian detection,

**A. Broggi, A. Fascioli, and P. Grisleri,**  
*Universit'a di Parma, Italy, and Electronic Research, Volkswagen AG, Germany*

## Classification and Recognition

Chair: Swarup Medasani

**04:20-04:40** Automatic Feature Localization in Thermal Images for Facial Expression Recognition,

**Leonardo Trujillo, Gustavo Olague, Riad Hammoud and Benjamin Hernandez,**  
*CICESE, Mexico, Delphi Electronics and Safety, USA, and Universidad Nacional Autonoma de Mexico, Mexico*

**04:40-05:00** Human Recognition Based on Face Profiles in Video,

**Xiaoli Zhou and Bir Bhanu,**  
*University of California, Riverside, CA, USA*

## Algorithm Performance Evaluation

Chair: James W. Davis

**05:00-05:20** Comparative Image Fusion Analysis,

**Firooz Sadjadi,**  
*Lockheed Martin Corporation*

**05:20-05:40** Performance Evaluation of Face Recognition using Visual and Thermal Imagery with Advanced Correlation Filters,

**Jingu Heo, Marios Savvides, and B.V.K. Vijayakumar,**  
*Carnegie Mellon University, USA*

## Closing session: Announcement and planing – 05:40- 06:00 PM

Chair: Robert McMillan, Riad Hammoud

**Workshop Evaluation:** best paper, recognition.

**Next OTCBVS :** Organizers, PC, Benchmark, ... get involved <sup>2</sup> !!

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<sup>2</sup>Send your suggestions/remarks, before and/or after the workshop, to Riad Hammoud at [riad.hammoud@delphi.com](mailto:riad.hammoud@delphi.com)