

event
video

eVi Newsletters
#02 - June 2012

TEC2011-25995 EventVideo (2012-2014)

Strategies for Object Segmentation, Detection and Tracking in Complex
Environments for Event Detection in Video Surveillance and Monitoring

<http://www-vpu.eps.uam.es/eventvideo/>

New Observer

We are glad to inform that since March 29th 2012 Tecnalia (<http://www.tecnalia.com/>) has joined as EventVideo Observer.

Tecnalia is a private, applied research centre of international excellence with a great impact on local industry, and turned into a centre that attracts people and organizations.



Second trimester progress report

During the second trimester, the project has been working on plan.

WP1 "Framework establishment and maintenance" has released June 2012 the first versions of deliverables D1.1 "System Infrastructure" (in draft status) and D1.2 "DiVA documentation".

The "pure" algorithmic workpackages, namely WP2 "Video object segmentation", WP3 "People modeling and detection" and WP4 "Video object tracking", have been working in fine tuning the algorithms designed and developed by the Video Processing and Understanding Lab (VPULab) in order to test them, end of this year, over the video sequences content sets (test sequences and associated ground-truths) defined in WP5. WP5 "Integration, orchestration, testing and evaluation, and dissemination" has released June 2012 the first version of deliverables D5.3 "EventVideo test sequences, ground-truth and evaluation methodology" and D5.4 "EventVideo results report".

Second trimester results

Project Documents

WP1

- D1.1v1 - System Infrastructure (public), June 2012
- D1.2v1 - DiVA Documentation (public), June 2012

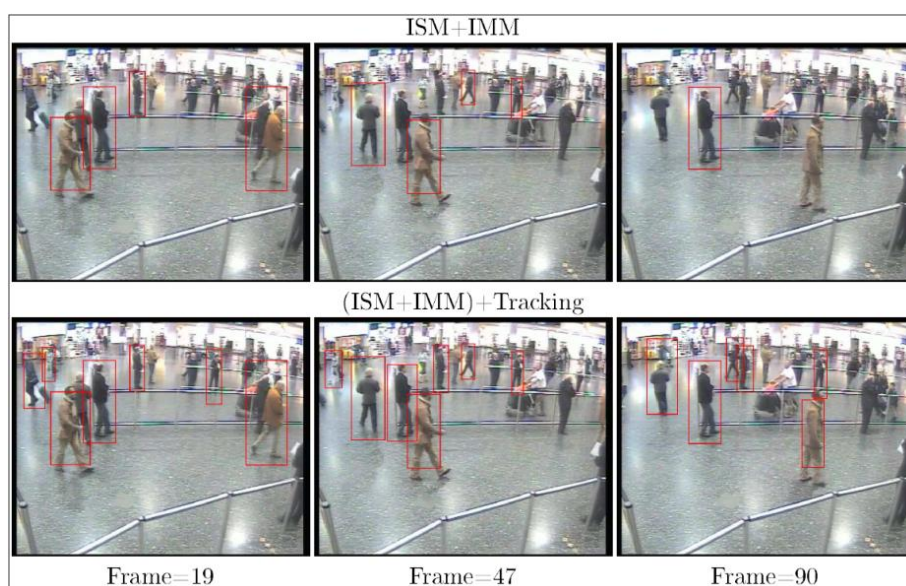
WP2

- D5.3v1 - EventVideo Test Sequences, Ground-truth and Evaluation Methodology (public), June 2012
- D5.4v1 - EventVideo Results Report (public), June 2012

Publications

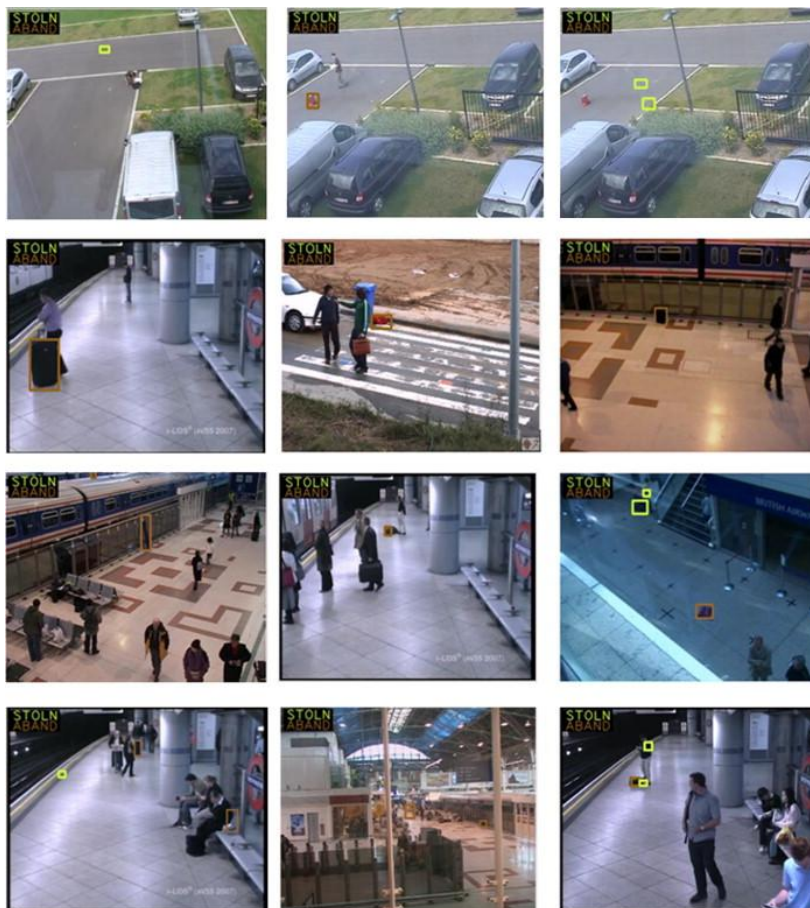
Álvaro García-Martín, José M. Martínez, “On collaborative people detection and tracking in complex scenarios”, *Image and Vision Computing*, 30(4-5):345-354, May 2012, Elsevier, ISSN 0262-8856 (DOI [10.1016/j.imavis.2012.03.005](https://doi.org/10.1016/j.imavis.2012.03.005)).

Abstract: The main contributions of this paper covers two different aspects: people detection and tracking. A whole detection/tracking system that integrates appearance, motion and tracking information is presented. This system uses the information provided by each of the independent tasks to improve the final result of the system. The tracking information is integrated in the detection task improving the detection results and viceversa. The experimental results over an extensive and challenging video dataset point out the state of the art limitations in complex or realistic scenarios, and show that the proposed collaborative system significantly reduces these limitations and improves the results in this kind of scenarios.



Juan Carlos San Miguel, José M. Martínez, "A semantic-based probabilistic approach for real-time video event recognition", *Computer Vision and Image Understanding*, 116(9):937–952, September 2012, Elsevier, ISSN 1077–3142 (DOI [10.1016/j.cviu.2012.04.005](https://doi.org/10.1016/j.cviu.2012.04.005)).

Abstract: This paper presents an approach for real-time video event recognition that combines the accuracy and descriptive capabilities of, respectively, probabilistic and semantic approaches. Based on a state-of-art knowledge representation, we define a methodology for building recognition strategies from event descriptions that consider the uncertainty of the low-level analysis. Then, we efficiently organize such strategies for performing the recognition according to the temporal characteristics of events. In particular, we use Bayesian Networks and probabilistically-extended Petri Nets for recognizing, respectively, simple and complex events. For demonstrating the proposed approach, a framework has been implemented for recognizing human-object interactions in the video monitoring domain. The experimental results show that our approach improves the event recognition performance as compared to the widely used deterministic approach.



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