

Report on ICCV 2009

Kyoto Japan

Dimitrios Makris



ICCV 2009

- Main Conference (29 Sept-2 Oct)
 - 1238 paper submissions
 - 48 oral presentations (3.6%)
 - 260 poster presentations (19.6%)
 - 1400 attendants
- Workshops and Tutorials (27-28 Sept, 3-4 Oct)
 - 20 Workshops (including PASCAL, VS, THEMIS, MLVMA, Subspace, Embedded)
 - 14 Tutorials

Awards

- Marr Prize - Best Paper: C. Desai, D. Ramanan and C. Fowlkes: "Discriminative Models for Multi-class Object Layout"
- Honorable Mention: A. Kirmani, T. Hutchison, J. Davis and R. Raskar: "Looking Around the Corner Using Transient Imaging"
- Azriel Rosenfeld Life Time Achievement Award: Berthold Klaus Paul Horn
- Computer Vision Significant Researcher Award: Andrew Blake
- Test-of-Time Award: Y. Lamdan and H. J. Wolfson: "Geometric Hashing: A General and Efficient Model-Based Recognition Scheme", ICCV1988

Topics

- Oral presentations
 - Sensing (7)
 - Segmentation (6)
 - Human Detection (3)
 - Recognition, Detection and Matching (3)
 - Learning (3)
 - Geometry (4)
 - Activity (4)
 - Shading and Colour (4)
 - Image and Video Editing (3)
 - Video and Image Sequences (3)
 - Similarity Metrics and Nearest Neighbours (4)
- Poster presentations
 - Learning and Recognition (107)
 - Video and Tracking (37)
 - Segmentation (30)
 - Low Level Vision and Others (30)
 - 3D Shape, Geometry and Stereo (28)
 - Camera (11)
 - Matching and Alignment (11)
 - Pose (6)

Segmentation, Ordering and Multi-object Tracking Using Graphical Models

Chaohui Wang, Martin de La Gorce, Nikos Paragios
(France)






- Multi-target tracking from single camera, especially when objects occlude each other.
- Generative scene modelling using layers (background, objects)
- Markov Random Field (MRF) at pixel and object level for segment, track and order tracks

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Chaohui Wang, Martin de La Gorce, Nikos Paragios



Tracking

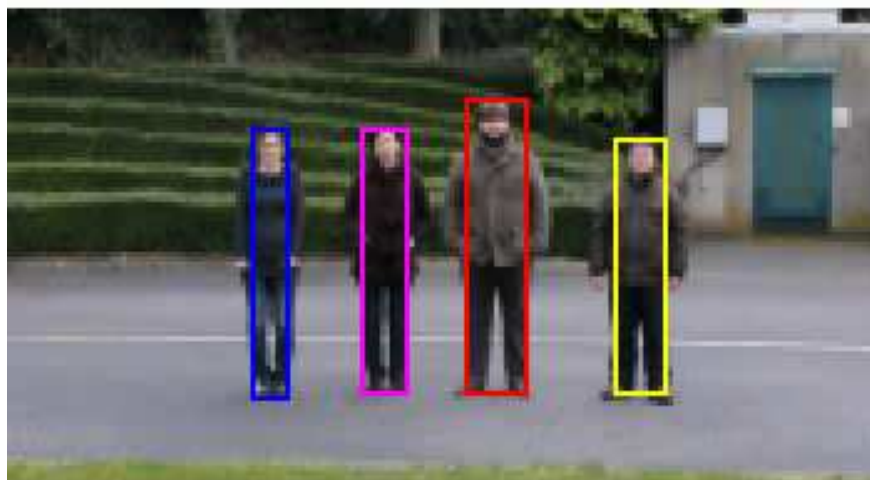
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Segmentation

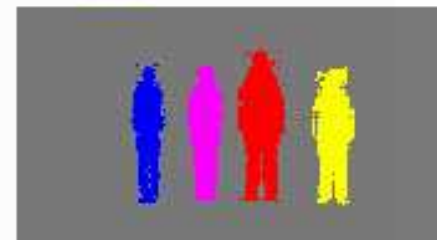
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Tracking

Object	Estimated Depth
	0
	0
	0
	0



Segmentation

Human Detection Using Partial Least Squares Analysis

William R. Schwartz, Aniruddha Kembhavi, David Harwood, Larry S. Davis (U of Maryland)

- Pedestrian detection, even in “dense” scenes and when camera is moving
- HOG + Colour features (~170000 dimensions!)
- Dimensionality Reduction to 20 dimensions by Partial Least Squares (PLS)

Human Detection Using Partial Least Squares Analysis

William R. Schwartz, Aniruddha Kembhavi, David Harwood, Larry S. Davis

Quasi-periodic Event Analysis for Social Game Retrieval

Ping Wang, Gregory D. Abowd, James M. Rehg

- Video Retrieval from YouTube: Social Games
- Quasi-periodic modelling
- Video representation by a discrete symbolic sequence

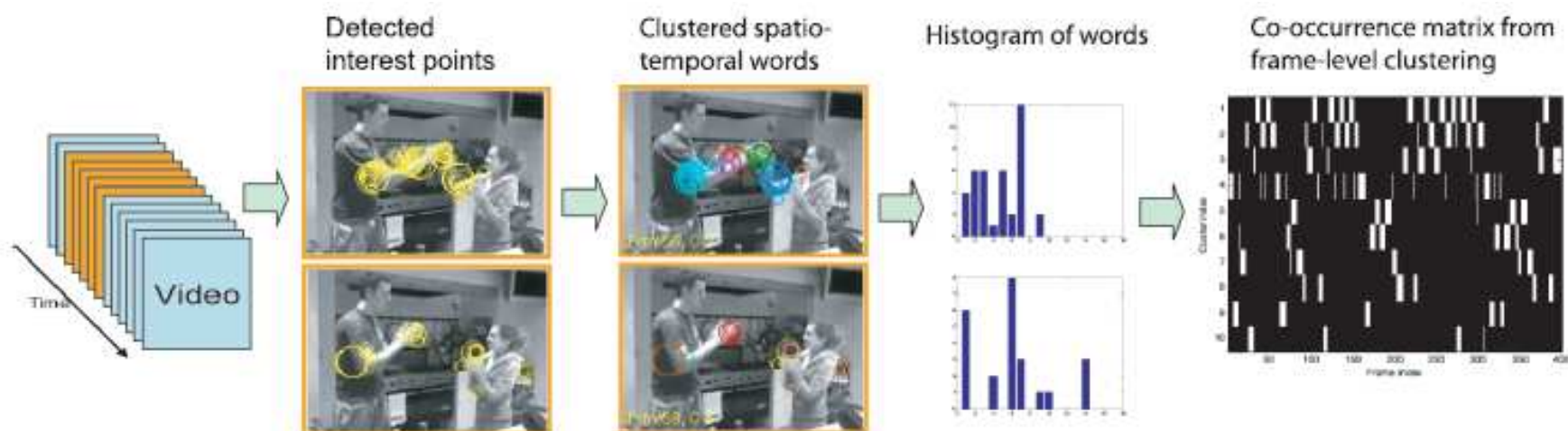


Figure 1. Illustration of our pipeline for converting an input video into a discrete symbolic sequence.

Automatic Segmentation of Social Games through Repetitive Structure Analysis

Video of social games are taken from YouTube
Each game is automatically parsed into a sequence of stages through quasi-periodic event analysis

Experiment 2
Retrieval of Social Games from Unstructured Videos recorded in a laboratory setting.

We show 2 true positives and 2 false positives.

Modelling Activity Global Temporal Dependencies Using Time Delayed Probabilistic Graphical Model

Chen Change Loy, Tao Xiang, Shaogang Gong

- Global activity dependency modelling for linking cameras with disjoint views
- Segment each view by spectral clustering of optical flow
- Time Delayed Probabilistic Graphical Model (TD-PGM)
- [Video](#)

Estimating Human Shape and Pose from a Single Image

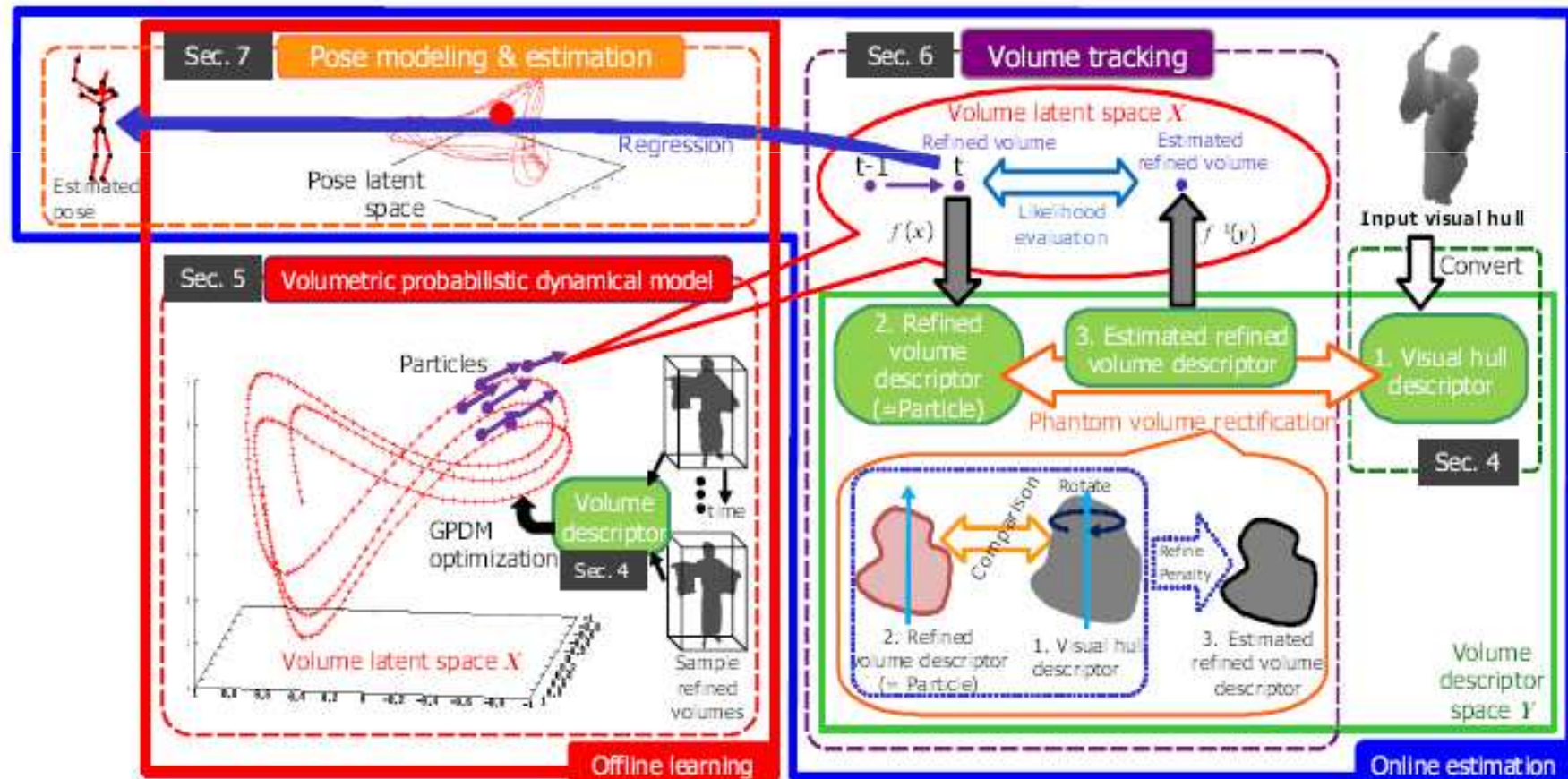
Peng Guan, Alexander Weiss, Alexandru O. Bălan,
Michael J. Black (Brown U)

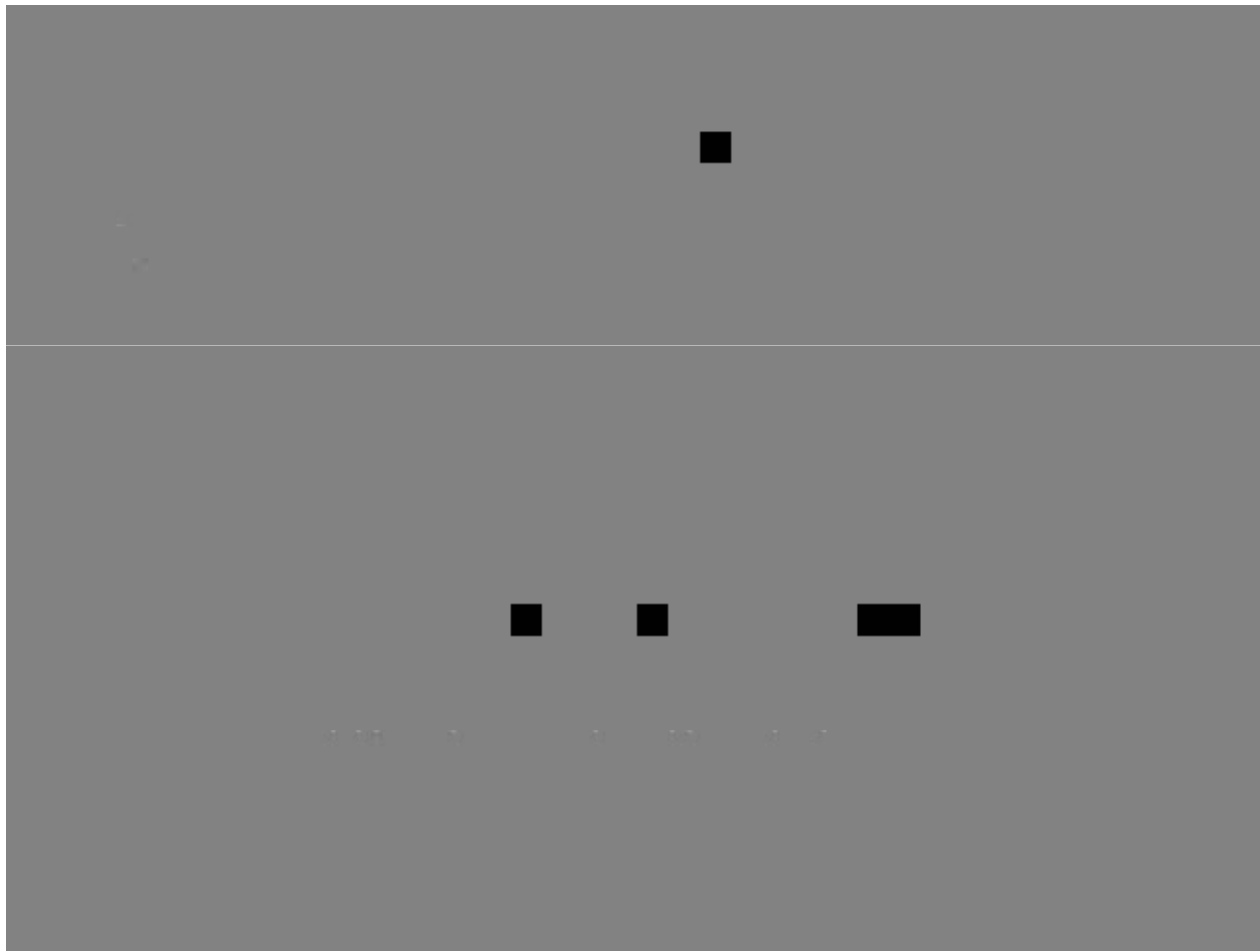
[Video](#)

Complex Volume and Pose Tracking with Probabilistic Dynamical Models and Visual Hull Constraints

Norimichi Ukita, Michiro Hirai, Masatsugu Kidode
CMU

- Articulated Tracking from Multiple Views





Automatic Annotation of Human Actions in Video

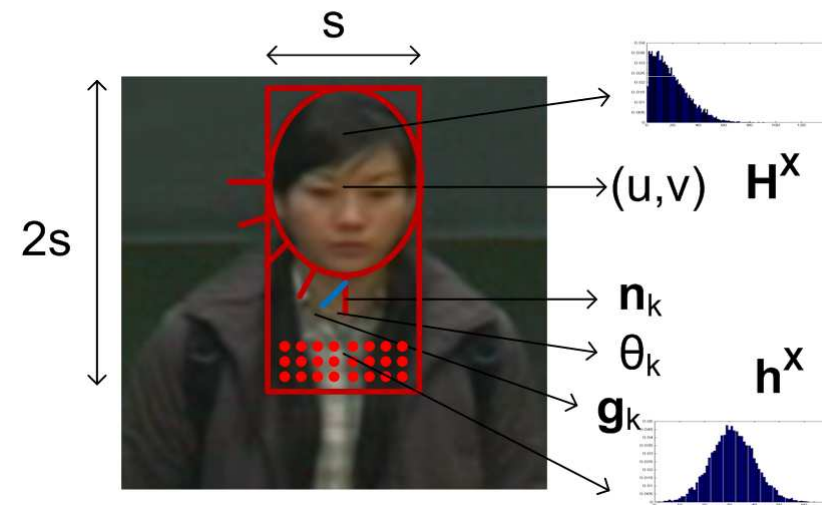
Olivier Duchenne, Ivan Laptev, Josef Sivic, Francis Bach, Jean Ponce (France)

- Human Action Retrieval from unconstrained videos
- [Video](#)

Detection Driven Adaptive Multi-cue Integration for Multiple Human Tracking

Ming Yang , Fengjun Lv, Wei Xu, Yihong Gong

- Multiple People Tracking
- Focus on the upper part of human body
- Modelling by 3 cues:
 - Elliptical Head
 - Torso Colour
 - Bag of Features



Detection Driven Adaptive Multi-cue Integration for Multiple Human Tracking

Ming Yang, Fengjun Lv, Wei Xu, Yihong Gong
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ICCV 2009

Correlated Probabilistic Trajectories for Pedestrian Motion Detection

Frank Perbet, Atsuto Maki, Björn Stenger

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Correlated Probabilistic Trajectories
for Pedestrian Motion Detection

Frank Perbet
Atsuto Maki
Björn Stenger

Toshiba Research Europe

Light Field Video Stabilization

Brandon M. Smith, Li Zhang, Hailin Jin, Aseem
Agarwala

[Video](#)