

WORKSHOP PROGRAM

Vision for Human-Computer Interaction (V4HCI) Workshop

in conjunction with CVPR 2005

Tuesday, 21 June 2005

The Catamaran Hotel

San Diego, CA

Workshop Chairs

Thomas S. Huang, University of Illinois at Urbana-Champaign

Branislav Kisačanin, Delphi Corporation

Mathias Kölsch, Naval Postgraduate School

Vladimir Pavlović, Rutgers University

Latest Information

For the latest information on the Workshop, please see our webpage:

http://www.delphi.com/news/call_papers/cvpr2005

As a follow-up to the Workshop, we would like to invite contributions to our Special Issue of the Computer Vision and Image Understanding Journal. More information can be found at

http://www.cs.ucsb.edu/~matz/CVIU_CFP.html

Keynote Address

Richard Marks

Sony Computer Entertainment America R&D

From Lab to Living Room

Computer vision has the potential to enable powerful new man-machine interface methodologies, but leveraging this technology for viable consumer products has proven difficult. Interactive entertainment applications (video games) offer an excellent launch pad for new technologies because the user is supportive and hopeful, and the focus is user enjoyment rather than productivity.

This talk describes how computer vision may be utilized for new interactive entertainment experiences. Lessons learned from the creation of EyeToy are used to guide current strategies and future possibilities for the use of computer vision in video games. Live demonstrations will show several new user-interaction capabilities enabled by the tremendous amount of computation and graphics power of next-generation consumer hardware.

Workshop at a Glance

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- 08:00 Setup time: posters, laptops, ...
- 08:50 Welcome to V4HCI Workshop – Workshop Chairs
- 09:00 Keynote Address – Richard Marks
- 10:00 *Coffee Break (15 min)*
- 10:15 Paper Presentations – Part I*
- 11:45 *Lunch Break (> 1 hour)*
- 01:00 Paper Presentations – Part II*
- 03:00 *Coffee Break (15 min)*
- 03:15 Paper Presentations – Part III*
- 04:25 Best Paper Award – Workshop Chairs
- 04:30 Discussion – Matthew Turk
- 05:30 Closing Remarks – Workshop Chairs

* See the Presentation Schedule below for a more detailed schedule.

Presentation Schedule

Session A: Medical, BCI

- 10:15-10:35 J P Helferty, A J Sherbondy, A P Kiraly, W E Higgins.
System for Live Virtual-Endoscopic Guidance of Bronchoscopy
- 10:35-10:50 D S Cheng, V D'Amato, V Murino.
Wavelet-Based Processing of EEG Data for Brain-Computer Interfaces

Session B: Human Body Tracking, Motion Capture

- 10:50-11:05 C W Chu, I Cohen.
Posture and Gesture Recognition Using 3D Body Shapes Decomposition
- 11:05-11:20 A Agarwal, B Triggs.
Monocular Human Motion Capture with a Mixture of Regressors
- 11:20-11:40 K S Huang, M M Trivedi.
3D Shape Context Based Gesture Analysis Integrated with Tracking Using
Omni Video Array
- 01:00-01:15 Z Feng, T-J Cham.
Video-Based Human Action Classification with Ambiguous Correspondences
- 01:15-01:30 K Moon, V Pavlovic.
Estimation of Human Figure Motion Using Robust Tracking of Articulated Layers

Session C: New Applications

- 01:30-01:50 W Liao, W Zhang, Z Zhu, Q Ji.
A Real-Time Human Stress Monitoring System Using Dynamic Bayesian Network
- 01:50-02:05 J Hannuksela, P Sangi, J Heikkila.
A Vision-Based Approach for Controlling User Interfaces of Mobile Devices

Session D: Hand Tracking

- 02:05-02:25 N Stefanov, A Galata, R Hubbard.
Real-Time Hand Tracking With Variable-Length Markov Models of Behaviour
- 02:25-02:45 A Erol, G Bebis, M Nicolescu, R D Boyle, X Twombly.
A Review on Vision-Based Full DOF Hand Motion Estimation
- 02:45-03:00 S Nayak, S Sarkar, B Loeding.
Unsupervised Modeling of Signs Embedded in Continuous Sentences

Session E: Face and Eyes

- 03:15-03:30 M F Valstar, I Patras, M Pantic.
Facial Action Unit Detection Using Probabilistic Actively Learned Support
Vector Machines on Tracked Facial Point Data
- 03:30-03:45 W-K Liao, I Cohen.
Classifying Facial Gestures in Presence of Head Motion
- 03:45-04:00 J Wang, L Yin.
Detecting and Tracking Eyes Through Dynamic Terrain Feature Matching
- 04:00-04:20 D Li, D Winfield, D J Parkhurst.
Starburst: A Hybrid Algorithm for Video-Based Eye Tracking Combining
Feature-Based and Model-Based Approaches