



**Human Motion**  
**Understanding, Modeling, Capture and Animation**  
**13th Workshop "Theoretical Foundations of Computer Vision"**

Schloß Dagstuhl. Wadern, Germany  
June 11 – June 16, 2006

**Chairmen**

**Bodo Rosenhahn** (Germany), **Dimitris Metaxas** (USA),  
and **Reinhard Klette** (New Zealand)

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**Monday morning**

09:00-09:20	Reinhard Klette Opening and Introduction
09:10 - 12	<b><u>SESSION 1: Human Motion Capture</u></b> chair: Atsushi Imiya
09:20-10:20	Ahmed Elgammal The role of Manifold learning in Human Motion Analysis
10:20-10:30	BREAK
10:30-11:00	Tomas Svoboda Multiview 3D Tracking with an Incrementally Constructed 3D Model
11:00-11:30	Thomas Brox Contours and Optical Flow: Cues for Capturing Human Motion in Videos
11:30-12:00	

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**Monday afternoon** - definition of working groups

14:00 – 14:30 **Definition of Working Groups**

chair: Bodo Rosenhahn

**Monday afternoon - first sessions of working groups**

14:30 – 15:30 **Working Groups**

NN (chair: NN) – Main Lecture Hall

NN (chair: NN) – Room N 033

NN (chair: NN) – Billiard room S 105

NN (chair: NN) – Wappensaal S 111

**Monday late afternoon**

16 - 18      **SESSION 2: Classification and Learning**

chair: Richard Green

16:00-17:00      Meinard Mueller and Tido Roeder  
Automatic Classification and Retrieval  
of Motion Capture Data

17:00-17:30      Jürgen Gall  
Learning a dynamic independent pose distribution  
within a Bayesian framework

17:30-18:00      Guy Rosman  
Non-convex manifold learning by robust flattening

**Monday evening after dinner**

19      **PERSONAL INTRODUCTIONS:** chair: Dimitris Metaxas

**location: White Hall** (Room S 101)

**Tuesday morning**

9 - 12      **SESSION 3: Modeling and Graphics**

chair: Dimitris Metaxas

09:00-10:00      Matthias Teschner  
Advances and Challenges in Interactive Deformable  
Modeling

10:00-10:20      BREAK

10:20-11:00      Michael Neff

- 11:00-11:30 From Performance-Theory to Animation Tools  
Vladimir Pavlovic  
Graphical models for human motion modeling
- 11:30-12:00 Christian Theobalt  
Video-based Capturing and Rendering of People

**Tuesday afternoon - working groups**

14-15.30 group meetings, including the following talks

- James Sherman: Detecting abnormal motion  
Yizhe (John) Lin: A comparative evaluation of computer vision approaches for 3D human face synthesis

**Tuesday late afternoon**

16 – 18 **SESSION 4: Pose Estimation and Animation**

chair: Harald Boehm

- 16:00-17:00 Dimitris Metaxas  
Hybrid Deformable Modeling Methods  
for Human Shape and Motion Analysis
- 17:00-17:30 Richard Green  
Empowering human-computer interactions with segmented motion.
- 17:30-18:00 James Sherman and Rama Chellappa  
Acquisition, Pose Estimation and Modelling  
of Human Body Shape and Motion

**Wednesday morning**

9 - 12 **SESSION 5: Motion and Tracking**

chair: Atsushi Imiya

- 09:00-10:00 Leo Dorst  
Motion Estimation using Clifford algebra
- 10:00-10:20 BREAK
- 10:20-11:00 Bodo Rosenhahn  
Tracking Clothed People
- 11:00-11:30 Uwe Kersting

11.30-12:00 Perspectives for Marker-less Tracking in Sports Applications  
Tomoya Sakai  
Motion analysis using scale-space tree

**Wednesday afternoon / evening - no official program**

13.15 Group photo (stairs to the chapel)  
13.30 Bus tour to NN, followed by a  
winery visit in NN, wine tasting and dinner

**Thursday morning**

9-12 **SESSION 6: Biomedical Applications**

chair: Richad Green

09:00-10:00 Lars Muendermann  
Markerless motion capture for biomechanical applications

10:00-10:20 BREAK

10:20-11:00 Dieter Rosenbaum  
Qualitative and quantitative aspects of movement. The  
discrepancy between clinical gait analysis  
and activities of daily life

11:00-11:30 Harald Boehm  
Visualization of athletes torque generation ability  
during handbike and rowing propulsion

11:30-12:00 Josephine Sullivan  
Human Motion Analysis in Sports Footage  
Detection, Recognition and Reconstruction

**Thursday afternoon - working groups**

14-15.30 group meetings

**Thursday late afternoon**

16-18 **SESSION 7: Actions and Interactions**

chair: Ahmed Elgammal

16:00-17:00 Daniel Grest  
MoCap for interaction environments

17:00-17:30 Volker Krüger

Recognition and synthesis of actions  
using a Dynamic Bayes Network

**Thursday evening after dinner**

19.30 **Round-table discussion**

**Chairs:** Lars Muendermann, and Josephine Sullivan  
Markerless motion capture from the biomechanical or clinical perspective

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**Friday morning**

9-12            **SESSION 8: Applications and Optical Flow**  
                  chair: Leo Dorst

- 09:00-09:30 Dimitris Samaras  
                  High Resolution Acquisition, Learning and Transfer of  
                  Dynamic 3D Facial Expressions
- 09:30-10:00 Stephan Al-Zubi  
                  Learning To Mimick Motion of Human Hand
- 10:00-10.20    **BREAK**
- 10:20-11:50 Atsushi Imiya  
                  3D optical flow computation theory and application
- 11.50-12.50  
                  Reports of Chairs of Working Groups

**Participants: please send submission for the edited book (Springer's series on Computational Imaging) by end of September 2006 to [rosenhahn@mpi-inf.mpg.de](mailto:rosenhahn@mpi-inf.mpg.de) (pdf format, min. 15 pages, max 25 pages, Kluwer tex style)**

**Reviewing will be in October, and camera-ready manuscripts (all tex sources) are due by end of November 2006**