# Table of Contents

## CLEAR 2007

The CLEAR 2007 Evaluation .............................................. 3  
Rainer Stiefelhagen, Keni Bernardin, Rachel Bowers, R. Travis Rose,  
Martial Michel, and John Garofolo

### 3D Person Tracking

The AIT 3D Audio / Visual Person Tracker for CLEAR 2007 .......... 35  
Nikos Katsarakis, Fotios Talantzis, Aristodemos Pnevmatikakis, and  
Lazaros Polymenakos

A Person Tracking System for CHIL Meetings .......................... 47  
Alessio Brutti

An Appearance-Based Particle Filter for Visual Tracking in Smart  
Rooms................................................................. 57  
Oswald Lanz, Paul Chippendale, and Roberto Brunelli

Multi-level Particle Filter Fusion of Features and Cues for Audio-Visual  
Person Tracking .......................................................... 70  
Keni Bernardin, Tobias Gehrig, and Rainer Stiefelhagen

Multispeaker Localization and Tracking in Intelligent Environments .... 82  
C. Segura, A. Abad, J. Hernando, and C. Nadeu

Multi-person Tracking Strategies Based on Voxel Analysis ............ 91  
C. Canton-Ferrer, J. Salvador, J.R. Casas, and M. Pardàs

TUT Acoustic Source Tracking System 2007 ............................. 104  
Teemu Korhonen and Pasi Pertilä

## 2D Face Detection and Tracking

The AIT 2D Face Detection and Tracking System for CLEAR 2007 .... 113  
Andreas Stergiou, Ghassan Karame,  
Aristodemos Pnevmatikakis, and Lazaros Polymenakos

PittPatt Face Detection and Tracking for the CLEAR 2007  
Evaluation ................................................................. 126  
Michael C. Nechyba, Louis Brandy, and Henry Schneiderman

Tsinghua Face Detection and Tracking for CLEAR 2007 Evaluation .... 138  
Yuan Li, Chang Huang, and Haizhou Ai
# Table of Contents

Person and Vehicle Tracking on Surveillance Data

The AIT Outdoor Tracker for Vehicles and Pedestrians in CLEAR2007 ......................................................... 148  
*Andreas Stergiou, Aristodemos Pnevmatikakis, and Lazaros Polymenakos*

Objective Evaluation of Pedestrian and Vehicle Tracking on the CLEAR Surveillance Dataset .......................... 160  
*Murtaza Taj, Emilio Maggio, and Andrea Cavallaro*

Person and Vehicle Tracking in Surveillance Video ................................................................. 174  
*Andrew Miller, Arslan Basharat, Brandyn White, Jingen Liu, and Mubarak Shah*

UMD VDT, an Integration of Detection and Tracking Methods for Multiple Human Tracking ...................... 179  
*Son Tran, Zhe Lin, David Harwood, and Larry Davis*

CLEAR'07 Evaluation of USC Human Tracking System for Surveillance Videos ........................................... 191  

Speed Performance Improvement of Vehicle Blob Tracking System ..................................................... 197  
*Sung Chun Lee and Ram Nevatia*

Vehicle and Person Tracking Aerial Videos

Vehicle and Person Tracking in Aerial Videos ................................................................................ 203  
*Jiangjian Xiao, Changjiang Yang, Feng Han, and Hui Cheng*

Person Tracking in UAV Video ............................................................................................................ 215  
*Andrew Miller, Pavel Babenko, Min Hu, and Mubarak Shah*

Person Identification

The AIT Multimodal Person Identification System for CLEAR 2007 ...................................................... 221  
*Andreas Stergiou, Aristodemos Pnevmatikakis, and Lazaros Polymenakos*

Acoustic Speaker Identification: The LIMSI CLEAR'07 System ....................................................... 233  
*Claude Barras, Xuan Zhu, Cheung-Chi Leung, Jean-Luc Gauvain, and Lori Lamel*

MIT Lincoln Laboratory Multimodal Person Identification System in the CLEAR 2007 Evaluation ............ 240  
*Kevin Brady*
Table of Contents XI

Multichannel and Multimodality Person Identification .......................... 248
  Ming Liu, Yanxiang Chen, Xi Zhou, Xiaodan Zhuang,
  Mark Hasegawa-Johnson, and Thomas Huang

ISL Person Identification Systems in the CLEAR 2007 Evaluations ...... 256
  Hazim Kemal Ekenel, Qin Jin, Mika Fischer, and
  Rainer Stiefelhagen

Robust Speaker Identification for Meetings: UPC CLEAR’07 Meeting
Room Evaluation System ..................................................... 266
  Jordi Luque and Javier Hernandez

Head Pose Estimation

Probabilistic Head Pose Tracking Evaluation in Single and Multiple
Camera Setups ................................................................. 276
  Sileye O. Ba and Jean-Marc Odobez

Joint Bayesian Tracking of Head Location and Pose from
Low-Resolution Video .......................................................... 287
  Oswald Lanz and Roberto Brunelli

Learning a Person-Independent Representation for Precise 3D Pose
Estimation ................................................................. 297
  Shuicheng Yan, Zhenqiu Zhang, Yun Fu, Yuxiao Hu, Jilin Tu, and
  Thomas Huang

Head Pose Estimation in Single- and Multi-view Environments –
Results on the CLEAR’07 Benchmarks ..................................... 307
  Michael Voit, Kai Nickel, and Rainer Stiefelhagen

Head Orientation Estimation Using Particle Filtering in Multiview
Scenarios ................................................................. 317
  C. Canton-Ferrer, J.R. Casas, and M. Pardas

Acoustic Event Detection

The Acoustic Event Detector of AIT ........................................ 328
  C. Boukis and L.C. Polymenakos

An HMM Based System for Acoustic Event Detection ...................... 338
  Christian Zieger

HMM-Based Acoustic Event Detection with AdaBoost Feature
Selection ................................................................. 345
  Xi Zhou, Xiaodan Zhuang, Ming Liu, Hao Tang,
  Mark Hasegawa-Johnson, and Thomas Huang
## Table of Contents

Acoustic Event Detection: SVM-Based System and Evaluation Setup in CLEAR’07

*Andrey Temko, Climent Nadeu, and Joan-Isaac Biel*

TUT Acoustic Event Detection System 2007

*Toni Heittola and Anssi Klapuri*

### RT 2007

The Rich Transcription 2007 Meeting Recognition Evaluation

*Jonathan G. Fiscus, Jerome Ajot, and John S. Garofolo*

The CHIL RT07 Evaluation Data

*Susanne Burger*

Shared Linguistic Resources for the Meeting Domain

*Meghan Lammie Glenn and Stephanie Strassel*

### Speech-to-Text

The 2007 AMI(DA) System for Meeting Transcription

*Thomas Hain, Lukas Burget, John Dines, Giulia Garau, Martin Karafiat, David van Leeuwen, Mike Lincoln, and Vincent Wan*

The IBM Rich Transcription 2007 Speech-to-Text Systems for Lecture Meetings

*Jing Huang, Etienne Marcheret, Karthik Visweswariah, Vit Libal, and Gerasimos Potamianos*

The LIMSI RT07 Lecture Transcription System

*L. Lamel, E. Bilinski, J.L. Gauvain, G. Adda, C. Barras, and X. Zhu*

The SRI-ICSI Spring 2007 Meeting and Lecture Recognition System

*Andreas Stolcke, Xavier Anguera, Kofi Boakye, Özgür Çetin, Adam Janin, Mathew Magimai-Doss, Chuck Wooters, and Jing Zheng*

The ISL RT-07 Speech-to-Text System

*Matthias Wölfel, Sebastian Stüker, and Florian Kraft*

### Speaker Diarization

Progress in the AMIDA Speaker Diarization System for Meeting Data

*David A. van Leeuwen and Matej Konečný*