



ACTIVITY REPORT 2005

Stripped version for internal use

IDIAP-COM 2006-01

MARCH 2006



IDIAP Research Institute

FOREWORD

This document is a subset of the usual IDIAP annual activity report for internal usage. It contains the sections about the IDIAP staff, educational and scientific activities, and the publication list.

The full, public annual activity report is also available from the IDIAP web site, www.idiap.ch.

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1 Staff

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1.2 Students

Mr	Cuong Huy TO		01.03.04 → 31.01.05
Mr	Guillaume HEUSCH		01.09.04 → 28.02.05
Mr	Maganti HARI KRISHNA		01.10.04 → 30.09.05
Mr	Siew Yeung WONG		01.01.05 → 30.06.05
Mr	Jean-Yves PARFAIT		01.02.05 → 30.06.05
Mr	David VANDROMME		01.02.05 → 30.06.05
Mr	Mikko LETHONEN		01.03.05 → 31.08.05
Mr	Tiffany SAUQUET		01.03.05 → 31.08.05
Mr	Dhiraj JOSHI		01.07.05 → 30.09.05
Mr	Jonathan REY		01.07.05 → 30.06.06
Mr	Coralie HEMPTINE		01.07.05 → 31.08.05
Mr	Gustavo DE ALMEIDA		01.07.05 → 30.09.05
Mr	Gerwin VAN DORN		01.09.05 → 31.03.06
Mr	Ferran GALAN		01.09.05 → 28.02.06
Mr	Octavian CHENG		01.10.05 → 31.03.06
Mr	Jean KEOMANY		01.11.05 → 28.02.06
Mr	Xavier PERRIN		01.11.05 → 28.02.06

1.3 Visitors

Dr	Robert VAN KOMMER	Swisscom	01.12.05 → 31.03.06
Dr	Joseph KESHET	Hebrew University of Jerusalem	11.10.05 → 02.11.05
Dr	Luc BERTHOUBE	AIST (Japan)	01.03.05 → 15.04.05
Mr	Friedrich MEYER	AIST (Japan)	01.03.05 → 15.04.05
Dr	Yves GRANDVALET	Université de Technologie de Compiègne	01.02.05 → 30.04.05
Dr	Hélène PAUGMAM-MOISY	Université Lumière Lyon 2	01.04.05 → 31.05.05

1.4 System and Development Staff

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1.5 Administrative Staff

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Mrs	Nadine ROUSSEAU Nadine.Rousseau@idiap.ch	Secretary +41 27 721 77 22	
Mrs	Joanne SCHULZ (MOORE)	HR assistant	→ 31.01.05
Mr	Edward Lee GREGG Ed.Gregg@idiap.ch	Financial assistant +41 27 721 77 54	
Mr	Michel SALAMIN	French teacher	

2 Educational Activities

2.1 Current PhD Theses

The list of current IDIAP PhD students with their supervisors and key dates is given in the table on next page.

2.2 IDIAP PhD Defenses

- **Ph.D. candidate:** Mohammed F. Benzeghiba
Supervisor: Hervé Bourlard
Examiners: Prof. Ch. Wellekens, Prof. Th. Dutoit, Dr B. Pfister
University: EPFL
Date: 08.04.05
Title: On the use of connectionist / generative models for joint speech and speaker recognition
- **Ph.D. candidate:** Mathew Magimai Doss
Supervisor: Hervé Bourlard
Examiners: Prof. S. Renals, Prof. R. De Mori
University: EPFL
Date: 08.07.05
Title: Using Auxiliary Sources of Knowledge for Automatic Speech Recognition
- **Ph.D. candidate:** Marc Barnard
Supervisor: Jean-Marc Odobez
Examiners: Prof. P. Bouthemy, Prof. G. Rigoll
University: EPFL
Date: 24.11.05
Title: Multimedia Event Modelling and Recognition
- **Ph.D. candidate:** Fabien Cardinaux
Supervisor: Sébastien Marcel
Examiners: Prof. J. Kittler, Prof. T. Cootes, Prof. J.-Ph. Thiran
University: EPFL
Date: 16.12.05
Title: Face authentication based on local features and generative models

PhD Students		Expected PhD	At IDIAP since	PhD Status	PhD Area	IDIAP Thesis Supervisor(s)	Thesis Director
Aradilla Zapata	Guillermo	2008	01.04.04	2nd year	SP	J. Vepa	Prof. H. Bourlard, EPFL
Barnard	Marc	2005	15.03.01	Completed	VI,IR	J.M. Odobez + S. Bengio	Prof. H. Bourlard, EPFL
Ba	Silève	2006	01.10.02	4th year	VI	J.M. Odobez + S. Bengio	Prof. H. Bourlard, EPFL
Benzeghiba	Mohammed F.	2005	01.08.00	Completed	BA	H. Bourlard	Prof. H. Bourlard, EPFL
Buttfield	Anna	2008	01.09.04	2nd year	MI	J. Millan	Prof. J. Millan, EPFL
Cardinaux	Fabien	2005	01.10.01	Completed	VI,BA	S. Marcel	Prof. J.-Ph. Thiran, EPFL
Chiappa	Silvia	2006	01.11.01	4th year	ML,MI	D. Barber	Prof. H. Bourlard, EPFL
Dimitrakakis	Christos	2006	01.10.01	4th year	ML	S. Bengio	Prof. H. Bourlard, EPFL
Ferrez	Pierre	2008	01.02.04	2nd year	MI	J. Millan	Prof. J. Millan, EPFL
Grangier	David	2007	01.10.03	3rd year	IR	S. Bengio	Prof. H. Bourlard, EPFL
Hari Krishna	Maganti	2009	01.10.05	1st year	SP	H. Bourlard	Prof. H. Bourlard, EPFL
Heusch	Guillaume	2009	01.07.05	1st year	VI	S. Marcel	Prof. H. Bourlard, EPFL
Just	Agnès	2006	01.10.02	4th year	VI	S. Marcel + S. Bengio	Prof. H. Bourlard, EPFL
Keller	Mikaela	2006	01.12.02	4th year	ML	S. Bengio	Prof. H. Bourlard, EPFL
Ketabdar	Hamed	2008	01.09.04	2nd year	SP	H. Bourlard	Not decided yet
Lathoud	Guillaume	2006	01.03.02	4th year	SP	H. Bourlard	Prof. H. Bourlard, EPFL
Lew Yi Lee	Eileen	2009	01.09.05	1st year	MI	J. Millan	Prof. J. Millan, EPFL
Magimai Doss	Mathew	2005	25.10.99	Completed	SP	H. Bourlard	Prof. H. Bourlard, EPFL
McGreevy	Michael	2006	15.01.03	4th year	SP	H. Bourlard	Prof. Sridharan, QUT
Mesot	Bertrand	2008	01.03.04	2nd year	ML,SP	D. Barber	Prof. H. Bourlard, EPFL
Misra	Hemant	2006	24.07.01	4th year	SP	H. Bourlard	Prof. H. Bourlard, EPFL
Monay	Florent	2006	01.08.02	4th year	VI,IR	D. Gatica-Perez + S. Bengio	Prof. H. Bourlard, EPFL
Paiement	Jean-François	2007	01.01.04	3rd year	ML	S. Bengio	Prof. H. Bourlard, EPFL
Peregoudov	Artem	2008	01.01.05	2nd year	SP	H. Bourlard	Prof. H. Bourlard, EPFL
Perrow	Mike	2008	01.12.04	2nd year	IR	D. Barber	Prof. H. Bourlard, EPFL
Pinto	Joel	2009	01.09.05	1st year	SP	H. Hermansky	Prof. H. Hermansky, EPFL
Poh Hoon Thian	Norman	2006	01.08.02	4th year	BA	S. Bengio	Prof. H. Bourlard, EPFL
Pozdnoukhov	Alexei	2006	01.01.03	4th year	ML	S. Bengio	Prof. H. Bourlard, EPFL
Quelhas	Pedro	2006	01.11.02	4th year	VI,IR	J.M. Odobez + S. Bengio	Prof. H. Bourlard, EPFL
Rodriguez	Yann	2006	01.09.02	4th year	VI,BA	S. Marcel + S. Bengio	Prof. H. Bourlard, EPFL
Smith	Kevin	2006	01.11.02	4th year	VI	D. Gatica-Perez + S. Bengio	Prof. H. Bourlard, EPFL
Zhang	Dong	2007	01.08.03	3rd year	VI	D. Gatica-Perez + S. Bengio	Prof. H. Bourlard, EPFL

ML: Machine Learning; SP: Speech Processing; VI: Computer Vision; BA: Biometric Authentication; IR: Information Retrieval; MI: Multimodal Interaction

2.3 Participation in PhD Thesis Committees

- **Ph.D. candidate:** Xiang Li
Thesis Supervisor: Prof. Richard M. Stern
University: Carnegie Mellon University
Date: February 2005
Title: Combination and Generation of Parallel Feature Streams for Improved Speech Recognition
Committee Members Tsuhan Chen, Rita Sigh, Hynek Hermansky
- **HDR (“habilitation à diriger des recherches”) candidate:** Christophe Ambroise
Thesis Supervisor: Gerard Govaert
University: Universite Technologique de Compiègne
Date: June 24, 2005
Title: Modèles pour l’apprentissage statistique à partir de données complexes
Committee Members Samy Bengio (IDIAP), Stéphane Canu (INSA, Rouen), Anne Guerin (IMAG, France), Jean-Michel Jolion (INSA, Lyon), Gilles Celeux (INRIA, France), Gerard Govaert (Universite Technologique de Rouen)
- **Ph.D. candidate:** Onno Zoeter
Thesis Supervisor: Tom Heskes
University: Radboud University Nijmegen
Date: 6.10.2005
Title: Monitoring non-linear and switching dynamical systems
Committee Members: David Barber, Tom Heskes, Hilbert Kappen, Stan Gielen
- **Ph.D. candidate:** Nicolas Moënne-Loccoz
Thesis Supervisor: T. Pun
University: Geneva University
Date: 12.12.2006
Title: Dynamics of visual components for content-based video management
Committee Members T. Pun, S. Marchand-Maillet, C. Schmit, J-M. Odobez and P. Joly.
- **Ph.D. candidate:** Serhiy Kosinov
Thesis Supervisor: Thierry Pun
University: University of Geneva
Date: December 12, 2005
Title: Machine Learning Approach to Semantic Augmentation of Multimedia Documents for Efficient Access and Retrieval
Committee Members Samy Bengio (IDIAP), Matthieu Cord (ENSEA, France), Eric Bruno (University of Geneva), Stéphane Marchand-Maillet (University of Geneva), Thierry Pun (University of Geneva)

2.4 Courses

- **Title:** Speech Processing
Lecturer: Prof. H. Bourlard
School: EPFL, Undergraduate (2nd cycle)
- **Title:** Statistical Pattern Recognition with applications to ASR
Lecturer: Prof. H. Bourlard
School: EPFL, I&C Doctoral School
- **Title:** Statistical Machine Learning from Data
Lecturer: Samy Bengio
School: EPFL, Doctoral School
- **Title:** Tutorial on Statistical Machine Learning, with application to Multimodal Interactions
Lecturer: Samy Bengio
School: International Conference on Multimodal Interaction (ICMI), October 2005, Trento, Italy.
- **Title:** Speech Processing by Humans and by Machines (One week intensive graduate course)
Lecturer: Hynek Hermansky
School: Brno University of Technology
- **Title:** Speech Recognition by Machine
Lecturer: Hynek Hermansky
School: Telluride Summer School on Neuromorphic Engineering
- **Title:** Cerveau, Technologie, Invalidité
Lecturer: José del R. Millán
School: HES, Sion
- **Title:** Emerging Technologies in Artificial Intelligence and Pattern Recognition
Lecturer: A. Vinciarelli and J-M. Odobez
School: Haute école d'ingénierie et de gestion du canton de Vaud (HEIG-VD)

2.5 Short term student projects

- **Trainee:** Cuong Huy To
Supervisor: Prof. H. Hermansky
University/School: Hanoi University of Technology, Vietnam
- **Trainee:** Guillaume Heusch
Supervisor: Dr S. Marcel
University/School: EPFL
- **Trainee:** Maganti Hari Krishna
Supervisor: Prof. H. Bourlard
University/School: Ulm University, Germany

- **Trainee:** Jean-Yves Parfait
Supervisor: Dr J. Vepa
University/School: Faculté Polytechnique de Mons, Belgium
- **Trainee:** David Vandromme
Supervisor: Dr A. Vinciarelli
University/School: Faculté Polytechnique de Mons, Belgium
- **Trainee:** Mikko Lethonen
Supervisor: Prof. H. Hermansky
University/School: EURECOM, France
- **Trainee:** Tiffany Sauquet
Supervisor: Dr S. Marcel
University/School: EURECOM, France
- **Trainee:** Coralie Hemptine
Supervisor: Prof. H. Bourlard
University/School: Faculté Polytechnique de Mons, Belgium

2.6 Other student projects

- **Trainee:** Jonathan Rey
Supervisor: Frank Formaz
University/School: Ecole des Métiers

3 Scientific Activities

3.1 Editorship

Prof. Hervé Bourlard is

- Member of the Editorial Board, Speech Communication
- Member of the Editorial Board, Intl. Journal of Pattern Recognition and Artificial Intelligence
- Member of the Editorial Board, Journal of Negative Results in Speech and Audio, <http://journal.speech.cs.cmu.edu/>
- Editor of the Special Issue on Biometric Signal Processing of Eurasp Journal on Applied Signal Processing (April 2004)

Prof. Hynek Hermansky is

- Member of the Editorial Board, Speech Communication
- Member of the Editorial Board, Phonetica
- Member of the Editorial Board, Journal of Negative Results in Speech and Audio, <http://journal.speech.cs.cmu.edu/>
- Editor of Special Issue of EURASIP JASP on Anthropomorphic processing of audio and speech

Dr David Barber is

- Associate Editor for Neurocomputing

Dr Samy Bengio is

- Associate Editor for the Journal of Computational Statistics

3.2 Scientific and Technical Committees

Prof. Hervé Bourlard is:

- Member of the Board of Trustees, Intl. Computer Science Institute, Berkeley, CA, USA
- Member of the European Information Society Technology Advisory Group (ISTAG)
- Fellow of the Engineering and Physical Sciences Research Council (EPSRC), UK
- Member of the Advisory Council of ISCA (International Speech Communication Association)
- Member of the Scientific Committee and area chair for Interspeech'05, Lisbon, September 2005.
- Member of the Scientific committee of MLMF'05, Edinburgh
- Member of the Scientific committee of European Symposium on Artificial Neural Networks, ESANN'05, Brugges
- Expert for several European projects

Prof. Hynek Hermansky is:

- Executive Chairman, 2005 International Conference on Text, Speech and Dialogue, Czech Republic

- Member of the Scientific and Technical Committee, SPECOM 2005, Patras, Greece
- Member of the Scientific and Technical Committee, IEEE Workshop ASRU-2005

Prof. José del R. Millán is

- Member of the Scientific American ThinkBank panel.
- Program Committee Member: 16th European Conf. on Machine Learning, IEEE/RSJ Int. Conf. on Intelligent Robots and Systems 2005, IEEE Int. Conf. on Robotics and Automation 2005, Robotics and Neurobiology Workshop (IWINAC'05 Conference), 8th Catalan Conference on Artificial Intelligence, Ubiquitous Computing and Ambient Intelligence 2005.
- Co-organizer, “Brain-Computer Interface” International Competition III.
- Expert for the European IST Programme.
- Member of the review panel for AGAUR, Catalonia (Spain).

Dr David Barber is

- Member of the review panel for the EPSRC, UK
- Member of the Research Review committee for the STW, The Netherlands

Dr Samy Bengio is

- General Chair: Joint AMI/PASCAL/IM2/M4 Workshop on Multimodal Interaction and Related Machine Learning Algorithms, Edinburgh, Scotland, July 2005, (MLMI'2005)
- Program Committee member: NIPS Workshop on Machine Learning for Implicit Feedback and User Modeling (NIPS'2005)
- Program Committee member: International Joint Conference on Artificial Intelligence (IJCAI'2005), Poster Track
- Program Committee member: International Workshop on Biometric Recognition Systems (IW-BRS'2005)
- Program Committee member: IEEE Workshop on Machine Learning for Signal Processing, (MLSP'2005)
- Scientific Committee member: European Symposium on Artificial Neural Networks (ESANN'2005)

Dr Daniel Gatica-Perez is

- Co-Chair, IEEE ICCV Workshop of Modeling People and Human Interaction (PHI), 2005.
- Organizing Committee Member, Int. Conf. on Image and Video Retrieval (CIVR), 2006.
- Technical Program Committee Member
 - IEEE Int. Conf. on Computer Vision (ICCV), 2005.
 - ACM Int. Conf. on Multimedia (MM), 2006.
 - IEEE Int. Conf. on Multimedia (ICME), 2005
 - IEEE Int. Conf. on Image Processing (ICIP), 2005.
 - Int. Conf. on Image and Video Retrieval (CIVR), 2006.

- Joint Workshop on Multimodal Interaction and Related Machine Learning Algorithms (MLMI), 2006.
- IEEE Int. Workshop on Technology for Education in Developing Countries (TEDC), 2005.

Dr Jean-Marc Odobez is

- Co-organizer: workshop on Multimodal Multiparty Meeting Processing, at 7th ACM ICMI 2005 conference.
- Program Committee Member:
 - IAPR Int. Conference Pattern Recognition Workshop : Learning for Adaptable Visual Systems, 2004.
 - IEEE CVPR Workshop on Object Tracking and Classification in and Beyond the Visible Spectrum, 2006.
- Technical Program Committee Member:
 - IEEE Int. Conf. Multimedia and Expo: 2004,2005
 - Inter. Conf. Pattern Recognition (ICPR): 2004
 - IEEE Int. Conf.on Computer Vision (ICCV): 2005
 - NIPS 2005
 - IEEE Int. Conf. on Computer Vision and Pattern Recognition (CVPR): 2006

Dr Alessandro Vinciarelli is

- Co-organizer of the International Workshop on Multimodal Multiparty Meeting Processing held in conjunction with International Conference on Multimodal Interfaces (October 2005).

Dr Pierre Wellner is

- Program Committee member: ACM Conference on User Interface Software Technology (UIST 2005).
- Demonstrations co-chair: UIST 2004.
- Program Committee member: MLMI 04.
- Conference Chair: UIST 2006.
- Editorial Board: Personal and Ubiquitous Computing.

3.3 Scientific Presentations (other than conferences)

In this section, we briefly list the scientific events and external (e.g., invited) talks, other than conferences, and which did not necessarily result in a publication.

- **Event:** Saarbrücken University
Date: January 13, 2005
Speaker: Hervé Bourlard
Title: Multi-channel modeling and integration with applications in speech and multimodal processing
- **Event:** Dept. of Computer Science, Università di Verona (Italy)
Date: January 25, 2005

Speaker: José del R. Millán

Title: Brain-Controlled Robots

- **Event:** Invited talk, Benelearn'2005, Fourteenth Dutch-Belgian Conference on Machine Learning, University of Twente. Enschede, Holland.

Date: February 2005

Speaker: Samy Bengio

Title: Challenges in Multi-Channel Sequence Processing

- **Event:** Invited talk, Signal Theory and Communications Department, Technical University of Catalonia, Barcelona

Date: Feb. 2005

Speaker: Daniel Gatica-Perez

Title: Recognizing human interaction in meetings

- **Event:** Invited talk, Signal Theory and Communications Department, Technical University of Catalonia, Barcelona

Date: Feb. 2005

Speaker: Daniel Gatica-Perez

Title: Audio-visual tracking with sequential Monte Carlo methods

- **Event:** CMU Graduate Seminar

Date: February 2005

Speaker: Hynek Hermansky

Title: Title: Towards a "Primal Sketch" of Speech

- **Event:** EURON Annual Meeting, Neurobotics Workshop, Warsaw (Poland)

Date: February 17, 2005

Speaker: José del R. Millán

Title: Non-Invasive Brain-Controlled Robots

- **Event:** Ciclo "Ciencia y Tecnología", Ministerio de Educación y Ciencia & Universidad de Oviedo, Gijón (Spain)

Date: February 25, 2005

Speaker: José del R. Millán

Title: Posibilidades de Interacción Cerebro-Ordenador

- **Event:** Seminar Cognition, Université Lumière Lyon 2, Lyon, France

Date: March 2005

Speaker: Samy Bengio

Title: Statistical Machine Learning Applied to Multi-Channel Sequence Processing

- **Event:** NBIC (Nano-Bio-Info-Cogno) Converging Technologies Forum. Barcelona (Spain)

Date: March 1, 2005

Speaker: José del R. Millán

Title: Brain-Actuated Interaction

- **Event:** Neurology Clinic and Neuroscience Dept., Geneva University (Switzerland)
Date: March 2, 2005
Speaker: José del R. Millán
Title: Brain-Computer Interfaces for Communication and Control
- **Event:** Urbana-Champaign University
Date: March 28, 2005
Speaker: Hervé Bourlard
Title: Multi-channel modeling and integration with applications in speech and multimodal processing
- **Event:** Irvine University
Date: April 1, 2005
Speaker: Hervé Bourlard
Title: Multi-channel modeling and integration with applications in speech and multimodal processing
- **Event:** Bristol University Engineering Department
Date: April 4, 2005
Speaker: David Barber
Title: Inference methods in machine learning
- **Event:** Florida Tech
Date: April 4, 2005
Speaker: Hervé Bourlard
Title: Multi-channel modeling and integration with applications in speech and multimodal processing
- **Event:** Edinburgh University Informatics Department
Date: May 9, 2005
Speaker: David Barber
Title: Expectation Correction for Switching Linear Gaussian Dynamical Systems
- **Event:** Forum Engelberg, Lucerne
Date: May 22-25, 2005
Speaker: Hervé Bourlard
Title: Invited speaker (2 talks): Computer Enhanced Group Communication in Meetings; A Few (Technical and Operational) Challenges in the Evolution of the IST 7th FWP
- **Event:** Société Valaisanne de Physique, Sion (Switzerland)
Date: June 10, 2005
Speaker: José del R. Millán
Title: Interfaces Cérébrales: De la Pensée à l'Action
- **Event:** Ulm University
Date: June 27, 2005
Speaker: Hervé Bourlard

- Title:** Multi-channel modeling and integration with applications in speech and multimodal processing
- **Event:** EU - INI Workshop: Integration of neuromorphic systems for sensory-motor processing, ETH Zurich
Date: July 2005
Speaker: Hynek Hermansky
Title: Human-Like Speech Information Processing
 - **Event:** SNN Radboud University Nijmegen
Date: October 5, 2005
Speaker: David Barber
Title: Kernelized Information theoretic Clustering
 - **Event:** International Conference on Multimodal interfaces Trento
Date: October 5, 2005
Speaker: Hervé Bourlard
Title: Invited panel discussion on: Multinational Cooperation on Multimodal Interaction
 - **Event:** University of Amsterdam, Informatics Institute
Date: October 7, 2005
Speaker: David Barber
Title: New Information theoretic approaches to Clustering
 - **Event:** Swiss Summit on ICT Next Generation Networks and Services, Fribourg
Date: 31 October 2005
Speaker: Hervé Bourlard
Title: Some ICT trends in multimodal processing at IDIAP and the EU
 - **Event:** Institute for Neuroinformatics, ETH Zurich
Date: November 2005
Speaker: Hynek Hermansky
Title: Towards bio-consistent processing of acoustic signals
 - **Event:** Invited talk, School of Computer Engineering, Nanyang Technological University, Singapore
Date: Nov. 2005
Speaker: Daniel Gatica-Perez
Title: Modeling group interaction in meetings
 - **Event:** Computer Science Faculty, Univ. of Karlsruhe (Germany). *Distinguished Lecture*
Date: November 28, 2005
Speaker: José del R. Millán
Title: Non-Invasive Brain-Controlled Robots
 - **Event:** ASRU'05, San Juan, Puerto Rico
Date: Nov.28-Dec.1, 2005
Speaker: Hervé Bourlard
Title: 3 invited panel discussions: ASR Funding: Successes and Pitfalls; What about large scale unsupervised learning ? ; Next ASR challenges: Computer Enhanced Group Communication in Meetings

4 Publications (2004 and 2005)

4.1 Articles in International Journals

- [1] A. VINCIARELLI, *Application of information retrieval techniques to single writer documents*, Pattern Recognition Letters, to appear, (2005).
- [2] A. VINCIARELLI, S. BENGIO, AND H. BUNKE, *Offline recognition of unconstrained handwritten texts using HMMs and statistical language models*, IEEE Transactions on Pattern Analysis and Machine Intelligence, 26 (2004), pp. 709–720.
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- [4] A. T. CEMGIL, B. KAPPEN, AND D. BARBER, *A Generative Model for Music Transcription*, IEEE Transactions on Speech and Audio Processing, (2004).
- [5] D. CHEN AND J.-M. ODOBEZ, *Video Text Recognition using Sequential Monte Carlo and Error Voting Methods*, Pattern Recognition Letters, 26 (2005), pp. 1386–1403.
- [6] D. CHEN, J.-M. ODOBEZ, AND H. BOURLARD, *Text Detection and Recognition in Images and Videos*, Pattern Recognition, 37 (2004), pp. 595–609.
- [7] D. CHEN, J.-M. ODOBEZ, AND J.-P. THIRAN, *A localization/verification scheme for finding text in images and video frames based on contrast independent features and machine learning methods*, Signal Processing: Image Communication, 19 (2004), pp. 205–217.
- [8] D. CHEN, J.-M. ODOBEZ, AND J.-P. THIRAN, *Monte Carlo Video Text Segmentation*, International Journal of Pattern Recognition and Artificial Intelligence (IJPRAI), 19 (2005), pp. 647–661.
- [9] S. CHIAPPA AND D. BARBER, *Eeg classification using generative independent component analysis*, Neurocomputing, (2006).
- [10] CONRAD SANDERSON AND KULDIP K. PALIWAL, *Identity verification using speech and face information*, Digital Signal Processing, 14 (2004), pp. 449–480.
- [11] CONRAD SANDERSON, SAMY BENGIO, AND YONGSHENG GAO, *On transforming statistical models for non-frontal face verification*, Pattern Recognition (in press), (2005).
- [12] F. DE WET, K. WEBER, L. BOVES, B. CRANEN, S. BENGIO, AND H. BOURLARD, *Evaluation of formant-like features for automatic speech recognition*, Journal of the Acoustical Society of America (JASA), 116 (2004), pp. 1781–1792.
- [13] FABIEN CARDINAUX, CONRAD SANDERSON, AND SAMY BENGIO, *User Authentication via Adapted Statistical Models of Face Images*, IEEE Transaction on Signal Processing, (2005).
- [14] R. GRAVE DE PERALTA MENENDEZ, S. GONZALEZ ANDINO, L. PEREZ, P. FERREZ, AND J. MILLÁN, *Non-invasive estimation of local field potentials for neuroprosthesis control*, Cognitive Processing, Special Issue on Motor Planning in Humans and Neuroprosthesis Control, (2005).
- [15] J. MARIÉTHOZ AND S. BENGIO, *A unified framework for score normalization techniques applied to text independent speaker verification*, IEEE Signal Processing Letters, Volume 12, 12 (2005).
- [16] I. MCCOWAN, D. GATICA-PEREZ, S. BENGIO, G. LATHOUD, M. BARNARD, AND D. ZHANG, *Automatic analysis of multimodal group actions in meetings*, IEEE Transactions on Pattern Analysis and Machine Intelligence (to appear), (2004).
- [17] J. MILLÁN, *Interfaces cerebrales*, Mente y Cerebro, (2005).

- [18] J. MILLÁN, F. RENKENS, J. MOURIÑO, AND W. GERSTNER, *Brain-actuated interaction*, Artificial Intelligence, (2004).
- [19] J. MILLÁN, F. RENKENS, J. MOURIÑO, AND W. GERSTNER, *Non-invasive brain-actuated control of a mobile robot by human EEG*, IEEE Trans. on Biomedical Engineering, Special Issue on Brain-Machine Interfaces, (2004).
- [20] J.-M. ODOBEZ, D. GATICA-PEREZ, AND S. BA, *Embedding motion in model-based stochastic tracking*, IEEE Trans. on Image Processing, accepted for publication, (2005).
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- [22] N. POH AND S. BENGIO, *Database, protocol and tools for evaluating score-level fusion algorithms in biometric authentication*, Pattern Recognition Journal, (2005).
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- [24] T. A. STEPHENSON, M. MAGIMAI-DOSS, AND H. BOURLARD, *Speech recognition with auxiliary information*, IEEE Trans. on Speech and Audio Processing, 4 (2004), pp. 189–203.
- [25] A. VINCIARELLI, *Noisy text categorization*, IEEE Transactions on Pattern Analysis and Machine Intelligence, to appear., (2005).
- [26] A. VINCIARELLI AND J.-M. ODOBEZ, *Application of information retrieval technologies to presentation slides*, IEEE Transactions on Multimedia, to appear, (2005).

4.2 Articles in Conference Proceedings

- [1] *Machine learning for multimodal interaction: First international workshop, MLMI'2004*, vol. 3361 of Lecture Notes in Computer Science, Springer-Verlag Heidelberg, 2005.
- [2] J. AJMERA, G. LATHOUD, AND I. MCCOWAN, *Clustering and segmenting speakers and their locations in meetings*, in ICASSP, 2004.
- [3] J. AJMERA, I. MCCOWAN, AND H. BOURLARD, *An online audio indexing system*, 2004.
- [4] M. AL-HAMES, A. DIELMANN, D. GATICA-PEREZ, S. REITER, S. RENALS, AND D. ZHANG, *Multimodal Integration for Meeting Group Action Segmentation and Recognition*, in MLMI, 2005.
- [5] G. ARADILLA, J. DINES, AND S. SIVADAS, *Using rasta in task independent tandem feature extraction*, in Proceedings of ICSLP, 2004, no. 22, Martigny, Switzerland, 2004.
- [6] G. ARADILLA, J. VEPA, AND H. BOURLARD, *Improving speech recognition using a data-driven approach*, in Proceedings of Interspeech, 2005, no. 66, Martigny, Switzerland, 2005.
- [7] M. ATHINEOS, H. HERMANSKY, AND D. P. ELLIS, *Lp-trap: Linear predictive temporal patterns*, 2004.
- [8] M. ATHINEOS, H. HERMANSKY, AND D. P. ELLIS, *Plp²: Autoregressive modeling of auditory-like 2-d spectro-temporal patterns*, 2004.
- [9] S. BA AND J.-M. ODOBEZ, *A probabilistic framework for joint head tracking and pose estimation*, in 17th Int. Conf. Pattern Recognition (ICPR), vol. 4, Cambridge, UK, Aug. 2004.
- [10] S. O. BA AND J. M. ODOBEZ, *Evaluation of multiple cues head pose tracking algorithm in indoor environments*, in International Conference on Multimedia & Expo ICME 2005, 2005.
- [11] S. O. BA AND J.-M. ODOBEZ, *A rao-blackwellized mixed state particle filter for head pose tracking*, in ACM ICMI Workshop on Multimodal Multiparty Meeting Processing (MMMP), 2005.

- [12] M. BARNARD AND J.-M. ODOBEZ, *Robust playfield segmentation using map adaptation*, in Proc. 17th International Conference on Pattern Recognition (ICPR 2004), Cambridge, United Kingdom, August 2004.
- [13] S. BENGIO AND J. MARIÉTHOZ, *The expected performance curve: a new assessment measure for person authentication*, in Proceedings of Odyssey 2004: The Speaker and Language Recognition Workshop, 2004.
- [14] S. BENGIO AND J. MARIÉTHOZ, *A statistical significance test for person authentication*, in Proceedings of Odyssey 2004: The Speaker and Language Recognition Workshop, 2004.
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- [16] M. F. BENZEGHIBA AND H. BOURLARD, *Confidence Measures in Multiple pronunciations Modeling For Speaker Verification*, in Proceedings of the 2004 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP-04), 2004.
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- [30] P. FERREZ AND J. MILLÁN, *You are wrong!—automatic detection of interaction errors from brain waves*, in Proceedings of the 19th International Joint Conference on Artificial Intelligence, Edinburgh, UK, August 2005.
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