

# Welcome to the IM2-II 2009 Summer Institute and Overview of Activities

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*Prof. Hervé Bourlard*  
*Idiap Research Institute and EPFL*  
*IM2 Director*

IM2 Summer Institute  
Chavanne-de-Bogis  
August 31 – September 2, 2009



FONDS NATIONAL SUISSE  
SCHWEIZERISCHER NATIONALFONDS  
FONDO NAZIONALE SVIZZERO  
SWISS NATIONAL SCIENCE FOUNDATION



# 2008 Joint Affective Sciences-IM2 Summer Institute

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- Riederalp/Aletsch, Sep.1-3, 2008
- 90+ participants
- **3 workshops**
  - *Multimodality in emotions and their assessment*
  - *Multimodal data management and annotation*
  - *Sensing and analyzing nonverbal behavior*
- **3 Special Interest Groups created**
  - *Emergent dynamics in emotional process (32+)*
  - *Emotional interfaces, common databases (18+)*
  - *Driving Emotional Behavior (15+)*



# Main goals of this Summer Institute

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- Get to know each others
- Learn about the different facets and activities of IM2
- Encourage PhD students to get in touch (initiate collaborations)
- Discuss current progress
- Planning of IM2-III and beyond...
- Consolidate annual progress report and IM2-III workplan (end of September)
- Prepare review meeting (Nov.12-13) at ETHZ

# 2009 Summer Institute Programme

<http://www.im2.ch/summer-institute-2009/>

Monday, August 31 <sup>st</sup>	Tuesday, September 1 <sup>st</sup>	Wednesday, September 2 <sup>nd</sup>
<b>10:45 - 11:30</b> <b>Travel</b> Arrivals at the Best Western Hôtel	<b>09:00 - 12:30</b> <b>Parallel activities:</b> - CERN: departure at 8:15 in front of the hotel - United Nations Office at Geneva - Personal work	<b>08:45 - 11:00</b> <b>Poster session</b>
		<b>10:00 - 10:30</b> <b>Coffee break (poster session)</b>
		<b>11:00 - 12:30 (Heads of IP 2, J.Sauer, P.Dillenbourg)</b> <b>3 Parallel Workshops:</b> 1. Enhancing teamwork with unobstructive devices 2. Document-based retrieval of multimedia content and user evaluations 3. Building and consolidating a long-lasting IM2 community
<b>12:00 - 13:30</b> <b>Lunch</b>	<b>13:00 - 14:30</b> <b>Lunch</b>	<b>12:30 - 13:30</b> <b>Lunch</b>
<b>13:30 - 14:00 (H.Bourlard / T.Ebrahimi)</b> <b>Welcome + overview of Phase II</b>	<b>14:30 - 14:45 (H. Bourlard / T. Ebrahimi)</b> <b>Introduction about IM2 Phase III</b>	<b>13:30 - 14:30 (Heads of IP 2, J.Sauer, P.Dillenbourg)</b> <b>Parallel Workshops (continued)</b>
<b>14:00 - 16:00 (Phase II IP Heads)</b> <b>Presentation of the IM2 Phase II key achievements</b>  <i>15mn presentation, 5mn questions</i>	<b>14:45 - 16:30 (Phase III IP Heads)</b> <b>Presentation of people &amp; objectives of new IPs</b> - IP1: Integrated Multimodal Processing - IP2: Human Centered Design and Evaluation - IP3: Social Signal Processing  <i>25mn presentation, 5mn questions</i>	<b>14:30 - 15:00</b> <b>Conclusions of workshops by the Chairmen</b>  <b>Outcomes and conclusions of the Summer Institute</b> Speakers: H. Bourlard / T. Ebrahimi
<b>16:00 - 16:30</b> <b>Coffee break</b>	<b>16:30 - 17:00</b> <b>Coffee break</b>	<b>15:00</b> <b>End of Summer Institute + Travel</b>
<b>16:30 - 18:30 (IM2 Phase II Phd &amp; PostDoc)</b> <b>2 Parallel Sessions:</b> Scientific presentations  <i>20mn presentation, 10mn questions</i>	<b>17:00 - 18:30 (J.Sauer &amp; P.Dillenbourg)</b> <b>Presentation of new partners and contribution in IM2 Phase III</b>  <i>35mn presentation, 10mn questions</i>	<b>15:00 - 18:00 (Phase II and III IP Heads)</b> <b>Special session</b> IM2 Technical Committee
<b>19:00</b> <b>Dinner</b>	<b>19:15</b> <b>Dinner</b>	

# 2 Parallel Technical Sessions

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- **Session 1 – Chairman: Jean-Marc Odobez**
  - *Quality Measures and Stacking Classifiers in Multimodal Biometric Recognition*
  - *Parts-based face verification using local frequency bands*
  - *Dealing with asynchrony in audio-visual speech recognition*
  - *Nonverbal small-group characterization: classification and mining*
- **Session 2 – Chairman: François Fleuret**
  - *Semi-supervised learning for handwriting recognition*
  - *The Hub and ezHub API*
  - *Mining query logs with topic models*
  - *Hough Transform-based Mouth Localization for Audio-Visual Speech Recognition*
- ***NOTE: Chairmen should provide me with 2 slides summaries of their session!!!***

# 3 Brainstorming Workshops

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- **Workshop 1 – Chairman: Pierre Dillenbourg**
  - *New IM2 application: Enhancing teamwork with unobstructive devices*
- **Workshop 2 – Chairman: Juergen Sauer**
  - *New IM2 applications: Document-based retrieval of multimedia content and user evaluations*
- **Workshop 3 – Chairman: Hervé Bourlard or Touradj Ebrahimi**
  - *Building and consolidating a long-lasting IM2 community*
- ***NOTE: Chairmen should provide me with 2 slides summaries of their session!!!***

# IM2 Vision and Goals

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- **Vision:**

- IM2: Interactive Multimodal Information Management
- R&D in automatic structuring of multimedia information systems and advanced multimodal HCI interfaces.
- **Common framework:**
  - Instrumented meeting rooms
  - Analysis, understanding and modeling of human-human communication scenes, including videoconferencing

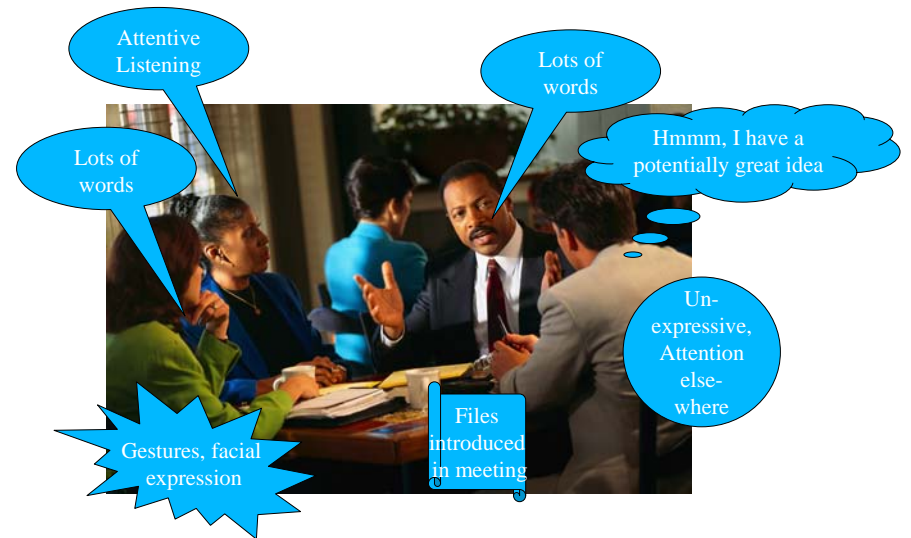
- **Goals:**

- Highest quality, and most competitive research at international level
- Integration in National and International relevant projects
- Enhancing teaching, training, and transfer of knowledge
- Strong and visible impact in terms of transfer of technology



# IM2 R&D Vision

- **General R&D Vision:**
  - Structuring of multimedia information systems
  - Advanced multimodal human computer interfaces
- **Specific Vision:**
  - Analysis, understanding, modeling and enhancement of human-human communication scenes





# IM2 Individual Projects (IPs)

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- **IM2.DMA** – Database Management and Access, Andrei Popescu-Belis (Idiap)
- **IM2.AP** – Audio Processing, John Dines (Idiap)
- **IM2.VP** – Visual/Video Processing, Jean-Philippe Thiran (EPFL)
- **IM2.MPR** – Multimodal Processing and Recognition, Aude Billard (EPFL)
- **IM2.MCA** – Multimodal Context Abstraction, Stéphane Marchand-Maillet (UniGE)
- **IM2.HMI** – Human-Machine Intercation, Denis Lalanne (UniFri)
- *[IM2.BMI – Brain Machine Interface, José del R. Millán (Idiap); now part of a new EPFL Neuro-Prosthesis Center]*

# IM2 Phase I (2002-2005)

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- Initiated the IM2 common vision:
  - *Human-to-human interaction in multimodal meeting recordings, and indexing and retrieval of relevant multimedia information*
- Developed the required hardware:
  - *Instrumented meeting rooms at Idiap and the University of Fribourg), software infrastructure, etc*
  - *Now available and used in multiple site in EU and US*
- Collected and annotated a large common multimodal corpus:
  - *Quite “unique” in size and (hierarchical) levels of annotation*
  - *Now used by multiple EU and US research institutions, include NIST as part of international evaluation campaigns*
- Fundament research:
  - *On this basis, we initiated and performed fundamental research in mono-modal and multimodal processing, encouraging the IM2 partners to test their research on the IM2 corpus, while adapting their software to the IM2 vision.*

# IM2 Phase II (2006-2009)

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- Consolidation the IM2 research and development efforts on our common vision
  - *IM2 involved in many EU and US projects related to IM2*
  - *IM2 involved in numerous evaluation campaigns*
  - *Resulting in large amounts of high quality publications*
- Increased emphasis on multimodal processing, system integration, HCI, and system evaluation
- Development of the “Hub, allowing easy integration of multiple modalities, software tools, and applications
- IM2 was enriched with a flexible user interface development tool (JFerret)
- Significant structural impact, at Idiap and in Universities (new professor positions, new chairs, etc)

# General Figures (Funding)

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- Home Institution: IDIAP, Martigny
- Partners: EPFL, UNIGE, UniFr, UNIBE, ETHZ
- Official Start: January 1, 2002
- Budget:
  - Phase I (2002-2005):
    - SNFS funding: 15'400'000.- CHF
    - Self & third-party funding: 16'220'000.- CHF
  - Phase II (2006-2009):
    - SNFS funding (Y3 20%, Y4 40% reduction): 11'900'000.- CHF
    - Self & third-party funding: 11'900'000.- CHF (minimum amount estimated)
  - Phase III (2010-2013):
    - Still to be confirmed
    - SNFS funding (40% of Phase II): 4'760'000.- CHF
    - Self & third-party funding: 4'765'000.- CHF (minimum amount estimated)
    - More on phase III plans presented tomorrow

# General Figures

## (Researchers and Publications)

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- Number of IM2 researchers:
  - Phase I: 123 (2002), 188 (2003), 228 (2004), 234 (2005)
  - Phase II: 176 (2006), 156 (2007), 120 (2008)
- Annual Publications:
  - 2002 (Jan. 2002 - Sep. 2002) : 54 publications + 16 reports
  - 2003 (Sep. 2002 - Sep. 2003): 125 publications + 65 reports
  - 2004 (Sep. 2003 - Sep. 2004): 248 publications + 153 reports
  - 2005 (Sep. 2004 - Sep. 2005): 253 publications + 89 reports
  - 2006 (Sep. 2005 - Sep. 2006): 192 publications (peer reviewed) + 58 reports
  - 2007 (Sep. 2006 - Sept 2007): 183 publications (peer reviewed) + 44 reports  
+ 3 Books/Book Chapters
  - 2008 (Sep. 2007 – Sep. 2008): 255 publications (peer reviewed) + 28 reports  
+ 10 Books/book Chapters
  - 2009 (Sep. 2008 – Sep. 2009): ?

# Some 2007-08 Academic Achievements

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- Science Direct (Elsevier) “Most Cited Paper” award in digital signal processing for (multimodal) paper entitled “Identity verification using speech and face verification”
- Best evaluation results in international CLEF evaluation for classification of medical images in 2007 and again in 2008
- EBF European Biometric Research Award 2007, for recognizing significant contributions made in the field of biometrics research
- Invitations to organize several special sessions or satellite workshops in international conferences
- IM2 work continues to be cited in the scientific community, e.g. as “closest to the vision” or “most promising research direction” in several recent papers by Prof. Alex Pentland (MIT)



# Involvement in Intl. Projects

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- FP6:
  - AMI/AMIDA, DIRAC (Idiap)
  - MultiMATCH (FP6-STREP), UniGe
- FP7:
  - IP: EMIME (IDIAP), TA2 (IDIAP)
  - STREP: MOBIO (IDIAP), SCOVIS (ETHZ)
  - NoE: PASCAL2 (IDIAP), PetaMedia (EPFL), SSPNET (IDIAP)
  - VISMMASTER (Coordinated Action) on visual analytics (UniFr). For more info: <http://vismaster.eu/>
- US-DARPA GALE Project, US-DTO VACE Roadmap Project

# Knowledge and Technology Transfer

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- Several spin-offs
  - SimpleUI (UniFri): Simple user interfaces
  - Kooaba (ETHZ): Hyperlink print advertising with digital content
  - Innostarter(ETHZ): Digitalisation of three dimensional object via 3D scanner.
  - *Klewel (IDIAP): Lecture acquisition and structuring system*
  - *KeyLemon (IDIAP-HEVS): Easy solution to lock and unlock a computer using your face*
  - *nViso (EPFL): Consumer Behavior for Marketing and Advertising Research*
- Multiple CTI projects
  - *E.g., CTI A-vision (EPFL, IDIAP, EyePmedia)*
- Venture Leader Prizes 2007
  - *Marianne Starlander and MedSLT(UniGE)*
  - *Herbert Bay and Till Quack for spin-off Kooaba (ETHZ)*
- Red Herring 100 Europe: KeyLemon (2009)
- Klewel (lecture acquisition system):
  - *Awards: Swiss Venture Leaders; Selection IMD E-MBA Start-ups; Brittany Creation (First Prize); CeBIT Germany (European Seal of excellence)*
  - *Multiple customers (UNESCO, ACM, Nestlé, etc)*

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# *Thank you for your attention!*

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Enjoy the Summer School  
Scientifically  
and  
Socially!!!!