



2009

Conference and workshops

Pocket Guide

Sponsors & Supporters

Sponsor:



In cooperation with:



Bi-Modal
Supporter:



Uni-Modal
Supporters:



Friend-level
Supporter:



Academic
Supporters:



ICMI-MLMI 2009: Main Conference At a Glance

	Monday, Nov. 2	Tuesday, Nov. 3	Wednesday, Nov. 4
9:00-10:00	Keynote Address: <i>Cynthia Breazeal,</i> <i>MIT</i> Location: Bartos theatre	Keynote Address: <i>Stephen Brewster,</i> <i>University of</i> <i>Glasgow</i> Location: Bartos theatre	Keynote Address: <i>Frédéric Kaplan,</i> <i>EPFL</i> Location: Bartos theatre
10:00-10:30	Coffee break Location: Lower lobby		
10:30-12:30	Multimodal Communication Analysis (Oral) Location: Bartos theatre	Fusion Engines for Multimodal Interfaces (Special Session) Location: Bartos theatre	Doctoral Spotlight (Oral) Location: Bartos theatre
12:30-14:00	Lunch Location: Main lobby		
14:00-15:30	Multimodal Dialog (Oral) Location: Bartos theatre	Gaze, Gesture, and Reference (Oral) Location: Bartos theatre	Multimodal Devices and Sensors (Oral) Location: Bartos theatre
15:30-16:00	Coffee break Location: Lower lobby		
16:00-17:30	Multimodal Communication Analysis and Dialog (Poster) Location: Lower lobby	Demonstration Session Locations: Lower lobby and Wiesner room	<ul style="list-style-type: none"> • Multimodal Applications and Techniques (Poster) • Doctoral Spotlight (Poster) Location: Lower lobby
	Banquet (18:30-22:30) Location: MIT Museum		Town Hall meeting (17:30-18:30) Location: Bartos theatre

ICMI-MLMI 2009: Workshops At a Glance

Thursday, November 5		Friday, November 6	
9:30-17:30	9:00-18:30	9:00-16:45	9:00-13:45
Workshop on Use of Context in Vision Processing (UCVP 2009)	2nd Workshop on Child, Computer and Interaction (WOCCI 2009)	Workshop on Affective-aware Virtual Agents and Social Robots (AFFINE 2009)	Workshop on Multimodal Sensor-Based Systems and Mobile Phones for Social Computing (MSSSC 2009)
Location: Wiesner room	Location: Bartos theatre	Location: Wiesner room	Location: Bartos theatre

Message from the Program and General Chairs

It is our great pleasure to welcome you to Cambridge and the joint meeting of the International Conference on Multimodal Interfaces and the workshop on Machine Learning for Multimodal Interaction!

This year ICMI and MLMI decided to join forces. The advisory boards of both meetings supported this decision as a way to consolidate the community and expand the range of topics of both meetings. We hope the decision will further improve the quality of this joint meeting and also unify the locus for the novel ideas in the area of Multimodal Interfaces and Interactions.

As a result of this effort, this year has seen an increase in submissions. We have nearly 120 papers 20 demos and 5 workshop and 4 Special session proposals submitted to the conference committee. Out of the 118 papers submitted, 41 were selected for oral and poster presentation, bringing the conference acceptance rate to 35%. Half of the demonstration proposals were accepted, bringing the number of academic demonstrations to ten. We are hosting four post-conference workshops centered on novel topics of multi-modality. Finally, one of the four proposed special sessions was selected for inclusion into the program, where it appears as a collection of six additional invited papers.

The review process was organized using the PCS submission and review system, which ICMI has used in the past. We are grateful to James Stewart for his timely and professional support.

To streamline the review process, this year we have selected a smaller number of Area Chairs (ACs) who appointed the Program Committee. The papers were allocated to ACs in areas of their expertise according to the indications of the submitters, and then checked for conflicts. ACs distributed the papers to members of program committee and volunteer reviewers for comments. Once reviews were submitted the ACs provided meta-reviews for all papers. The scores of the papers were then collected and tabulated. All reviews and papers were then again checked by the Program Chairs, and papers with highly varying scores received an additional round of reviews. Based on this thorough review process 41 papers were selected for presentation. The program was formed by grouping papers into main topics of interest for this year's conference.

Following the trend in the academic meetings to reduce amount of waste we decided to distribute the conference proceedings on USB Flash Drives. We decided that flash drives provide the best tradeoff between cost and flexibility for participants since they can be freely re-used once their content is thoroughly memorized.

This year we have selected 6 papers as candidates for two awards: Outstanding Student Paper, sponsored by MERL, and Outstanding Paper, sponsored by Google. An anonymous committee has been selected by Program and General Chairs reviewing 10% of the top scoring papers. You will find the nominated papers

Message from the Program and General Chairs

in the conference program marked with special symbol. The final award decisions will be made at the conference banquet on Monday evening.

The financial crisis has taken its toll on everyone. The US National Science Foundation (NSF) has very generously provided us with travel and housing support for twelve students to help offset pressure on academic travel budgets. Two European academic projects have also contributed significant amount of funds to the conference organization: Augmented Multi-Party Interaction (AMI), and the Swiss National Center of Competence in Research on Interactive Multimodal Information Management (IM2). Finally, we thank the European Network of Excellence on Pattern Analysis, Statistical Modeling, and Computational Learning (PASCAL 2) for the funding to support the travel of two of our keynote speakers. Even in these difficult times, many companies affirmed their support of the multimodal interaction and interface research community by providing ICMI-MLMI with a previously unseen level of financial support. All of these organizations deserve our warmest gratitude: Mitsubishi Electric Research Labs, Google, Microsoft Research, Honda Research Institute-US, The Mathworks, and Telefonica! Without their generous support this meeting would not have been possible.

The chairs would like to thank our colleagues on the conference committee for their tireless effort bringing this meeting together: Sonya Allin, Matthew Berlin, Hervé Boulard, Xilin Chen, Rana el Kaliouby, Clifton Forlines, Cole Krumbholz, Denis Lalanne, Yang Liu, Kenji Mase, Janet McAndless, Louis-Philippe Morency, Steve Renals, Deb Roy and Enrique Vidal.

We are indebted to all volunteers that contributed their effort to the review process and made it easy to develop a high quality technical program.

We would like to acknowledge the hospitality of our host: the MIT Media Laboratory. Mitsumi Sullivan, Kevin Davis, Tanya Schalchlin bravely took on the challenge of making an unruly crowd of researchers from all over the world feel right at home.

Last but not least, we would like to thank you: the authors and attendees. Thank you for your work and your time. We hope your find a meeting filled with new ideas, old colleagues and future collaborators!

General Chairs

James Crowley
Yuri Ivanov
Christopher Wren

Program Chairs

Daniel Gatica-Perez
Rainer Stiefelhagen
Michael Johnston

ICMI-MLMI 2009 Organizing Committee

General Co-Chairs: James L. Crowley (*INRIA Grenoble Rhone-Alpes, France*)
Yuri Ivanov (*MERL, USA*)
Christopher Wren (*Google, USA*)

Program Co-Chairs: Daniel Gatica-Perez (*Idiap Research Institute, Switzerland*)
Michael Johnston (*AT&T Research, USA*)
Rainer Stiefelwagen (*Karlsruhe Institute of Technology & Fraunhofer ITB, Germany*)

Treasurer: Janet McAndless (*MERL, USA*)

Sponsorship Chair: Hervé Bourlard (*Idiap Research Institute, Switzerland*)

Student Chair: Rana el Kaliouby (*MIT Media Lab, USA*)

Volunteer Chair: Matthew Berlin (*MIT Media Lab, USA*)

Local Arrangements: Clifton Forlines (*MERL, USA*)
Deb Roy (*MIT Media Lab, USA*)

Publicity: Sonya Allin (*University of Toronto, Canada*)
Yang Liu (*University of Texas at Dallas, USA*)

Publications: Louis-Philippe Morency (*University of Southern California, USA*)

Workshops: Xilin Chen (*JDL, China*)
Steve Renals (*University of Edinburgh, UK*)

Demos: Denis Lalanne (*University of Fribourg, Switzerland*)
Enrique Vidal (*Polytechnic University of Valencia, Spain*)

Posters: Kenji Mase (*University of Nagoya, Japan*)

Administration Support: Mitsumi Sullivan (*MIT Media Lab, USA*)

Facilities: Kevin Davis (*MIT Media Lab, USA*)

Special Session: Philippe Palanque (*University Toulouse 3, France*)

ICMI-MLMI 2009 Organizing Committee

Area Chairs: Tilman Becker (*DFKI, Germany*)
Tanzeem Choudhury (*Dartmouth College, USA*)
Trevor Darrell (*UCB/ICSI, USA*)
Jean-Claude Martin (*LIMSI-CNRS, France*)
Anton Nijholt (*University of Twente, Netherlands*)
Nuria Oliver (*Telefonica, Spain*)
Kazuhiro Otsuka (*NTT, Japan*)
Fabio Pianesi (*Fondazione Bruno Kessler, Italy*)
Andrei Popescu-Bells (*Idiap Research Institute, Switzerland*)
Gerasiomos Potamianos (*NCSR "Demokritos," Greece*)
Jie Yang (*CMU, USA*)

ICMI Advisory Board: Matthew Turk, Chair (*UC Santa Barbara, USA*)
James L. Crowley (*INRIA Grenoble Rhone-Alpes, France*)
Trevor Darrell (*UCB/ICSI, USA*)
Eric Horvitz (*Microsoft Research, USA*)
Kenji Mase (*University of Nagoya, Japan*)
Sharon Oviatt (*Adapx, USA*)
Fabio Pianesi (*ITC-irst, Italy*)
Wolfgang Wahlster (*DFKI, Germany*)
Jie Yang (*Carnegie Mellon University, USA*)

MLMI Advisory Board: Samy Bengio (*Google, USA*)
Hervé Bourlard (*Idiap Research Institute, Switzerland*)
Jean Carletta (*University of Edinburgh, UK*)
Sadaoki Furui (*Tokyo Institute of Technology, Japan*)
Sharon Oviatt (*Adapx, USA*)
Catherine Pelachaud (*CNRS, France*)
Andrei Popescu-Belis (*Idiap Research Institute, Switzerland*)
Steve Renals (*University of Edinburgh, UK*)
Rainer Stiefelhagen (*KIT & Fraunhofer IITB, Germany*)

19:00-
21:00

Reception
Location: Lower lobby

Registration desk

Location: Main lobby

Schedule:

- Sunday: 19:00-21:00
- Monday 8:00-17:00
- Tuesday 8:30-17:00
- Wednesday 8:30-17:00
- Thursday 8:30-12:00
- Friday 8:30-12:00

9:00 Keynote address:
Living Better with Robots
Cynthia Breazeal, MIT

Location: Bartos theatre
Session Chair: *Yuri Ivanov, MERL*

Abstract:

The emerging field of Human-Robot Interaction is undergoing rapid growth, motivated by important societal challenges and new applications for personal robotic technologies for the general public. In this talk, I highlight several projects from my research group to illustrate recent research trends to develop socially interactive robots that work and learn with people as partners. An important goal of this work is to use interactive robots as a scientific tool to understand human behavior, to explore the role of physical embodiment in interactive technology, and to use these insights to design robotic technologies that can enhance human performance and quality of life. Throughout the talk I will highlight synergies with HCI and connect HRI research goals to specific applications in healthcare, education, and communication.

Bio:

Dr. Cynthia Breazeal is an Associate Professor of Media Arts and Sciences at the Massachusetts Institute of Technology where she founded and directs the Personal Robots Group at the Media Lab and directs the Center for Future Storytelling. She is a pioneer of Social Robotics and Human Robot Interaction (HRI). Her research program focuses on developing personal robots that interact with humans in human-centric terms, work with humans as partners, and learn from people via tutelage. More recent work investigates the impact of long term HRI applied to communication, quality of life, health, and educational goals. She has authored the book “Designing Sociable Robots” and has published over 100 peer-reviewed articles in autonomous robotics, artificial intelligence, HRI, and robot learning. She has been awarded an ONR Young Investigator Award, honored as finalist in the National Design Awards in Communication, and recognized as a prominent young innovator by the National Academy of Engineering’s Gilbreth Lecture Award. She received her Sc.D. in Electrical Engineering and Computer Science from MIT in 2000.

10:00 Coffee break

Location: Lower lobby

10:30 Multimodal Communication Analysis (Oral)

Location: Bartos theatre

Session Chair: *Steve Renals, University of Edinburgh*

1. Discovering Group Nonverbal Conversational Patterns with Topics
Dinesh Babu Jayagopi, Daniel Gatica-Perez
2. Agreement Detection in Multiparty Conversation
Sebastian Germesin, Theresa Wilson
3. Multimodal Floor Control Shift Detection
Lei Chen, Mary Harper
4. Static vs. Dynamic Modeling for Human Nonverbal Behavior from Multiple Cues and Modalities
Stavros Petridis, Hatice Gunes, Sebastian Kaltwang, Maja Pantic

12:30 Lunch

Location: Main lobby

14:00 Multimodal Dialog (Oral)

Location: Bartos theatre

Session Chair: *Alexandros Potamianos, Technical University of Crete*

1. Dialog in the Open World: Platform and Applications
Dan Bohus, Eric Horvitz
2. Towards Adapting Fantasy, Curiosity and Challenge in Multimodal Dialog Systems for Preschoolers
Theofanis Kannetis, Alexandros Potamianos
3. Building Multimodal Applications with EMMA
Michael Johnston

15:30 Coffee break

Location: Lower lobby

16:00 Multimodal Communication Analysis and Dialog (Poster)

Location: Lower lobby

Session Chair: *Kenji Mase, University of Nagoya*

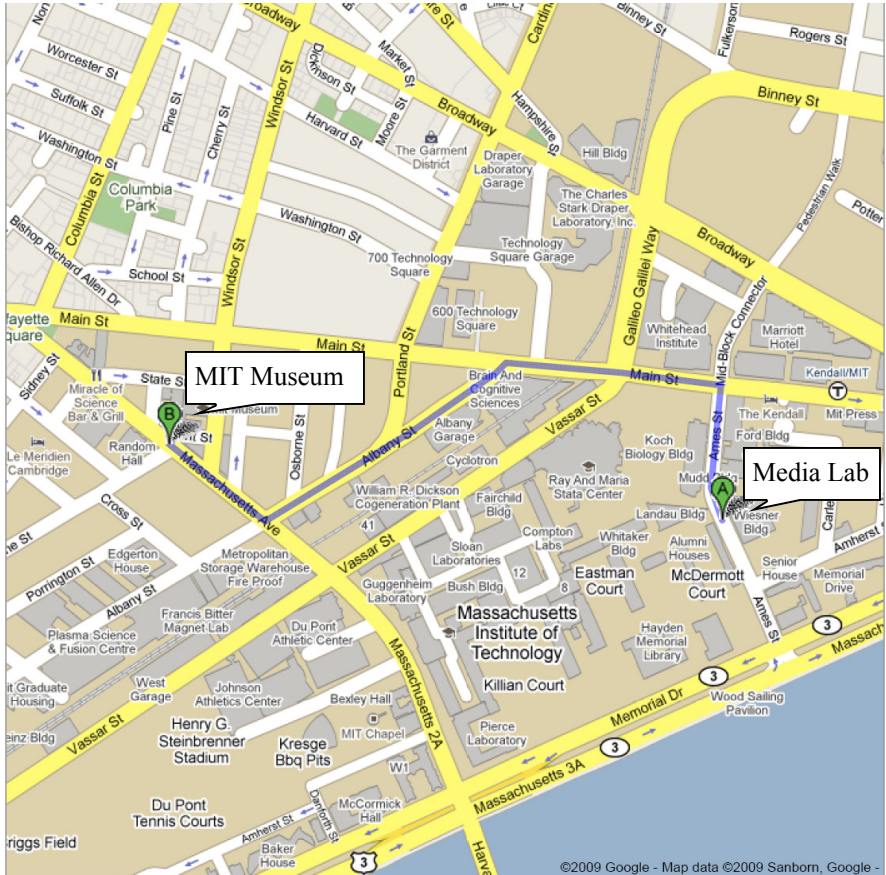
- A Speaker Diarization Method Based on the Probabilistic Fusion of Audio-Visual Location Information *Kentaro Ishizuka, Shoko Araki, Kazuhiro Otsuka, Tomohiro Nakatani, Masakiyo Fujimoto*
- Dynamic Robot Autonomy *Paul Schermerhorn, Matthias Scheutz*
- A Speech Mashup Framework for Multimodal Mobile Services *Giuseppe Di Fabrizio, Thomas Okken, Jay G. Wilpon*
- Detecting, Tracking and Interacting with People in a Public Space *Sunsern Cheamanukul, Evan Ettinger, Matt Jacobsen, Patrick Lai, Yoav Freund*
- Cache-based Language Model Adaptation using Visual Attention for ASR in Meeting Scenarios *Neil J. Cooke, Martin J. Russell*
- Multimodal End-of-Turn Prediction in Multi-Party Meetings *Iwan de Kok, Dirk Heylen*
- Recognizing Communicative Facial Expressions for Discovering Interpersonal Emotions in Group Meetings *Shiro Kumano, Kazuhiro Otsuka, Dan Mikami, Junji Yamato*
- Classification of Patient Case Discussions Through Analysis of Vocalisation Graphs *Saturnino Luz, Bridget Kane*
- Learning from Preferences and Selected Multimodal Features of Players *Georgios N. Yannakakis*
- Detecting User Engagement with a Robot Companion Using Task and Social Interaction-based Features *Ginevra Castellano, André Pereira, Iolanda Leite, Ana Paiva, Peter W. McOwan*
- Multi-Modal Features for Real-Time Detection of Human-Robot Interaction Categories *Ian Fasel, Masahiro Shiomi, Philippe-Emmanuel Chadutaud, Takayuki Kanda, Norihiro Hagita, Hiroshi Ishiguro*
- Modeling Culturally Authentic Style Shifting with Virtual Peers *Justine Cassell, Kathleen Geraghty, Berto Gonzalez, John Borland*
- Between Linguistic Attention and Gaze Fixations in Multimodal Conversational Interfaces *Rui Fang, Joyce Chai, and Fernanda Ferreira*

Monday, November 2

Main Conference

18:30- Banquet

22:30 Location: MIT Museum (265 Massachusetts Avenue, Cambridge, MA 02139)



9:00 PASCAL Keynote Address:

Head-up interaction: Can we break our addiction to the screen and keyboard?

Stephen Brewster, University of Glasgow

Location: Bartos theatre

Session Chair: *Chris Wren, Google*

Abstract:

Mobile user interfaces are commonly based on techniques developed for desktop computers in the 1970s, often including buttons, sliders, windows and progress bars. These can be hard to use on the move, which then limits the way we use our devices and the applications on them. This talk will look at the possibility of moving away from these kinds of interactions to ones more suited to mobile devices and their dynamic contexts of use where users need to be able to look where they are going, carry shopping bags and hold on to children. Multimodal (gestural, audio and haptic) interactions provide us new ways to use our devices that can be eyes and hands free, and allow users to interact in a 'head up' way. These new interactions will facilitate new services, applications and devices that fit better into our daily lives and allow us to do a whole host of new things. Brewster will discuss some of the work being done on input using gestures done with fingers, wrist and head, along with work on output using non-speech audio, 3D sound and tactile displays in applications such as for mobile devices such as text entry, camera phone user interfaces and navigation. He will also discuss some of the issues of social acceptability of these new interfaces.

Bio:

Stephen Brewster has been a professor of human-computer interaction in the department of computing science at the University of Glasgow since 2001. He was an EPSRC Advanced Research Fellow from 2003-2008. His research focuses on multimodal human computer interaction, or using multiple sensory modalities (particularly hearing, touch and smell) to create richer interactions between human and computer. His work has a strong experimental focus, applying perceptual research to practical situations. He has shown that novel use of multimodality can significantly improve usability in a wide range of situations, for mobile users, visually impaired people, older users and in medical applications.

10:00 Coffee break

Location: Lower lobby

10:30 Fusion Engines for Multimodal Interfaces (Special Session)

Location: Bartos theatre

Session Chair: *Philippe Palanque, University of Toulouse*

1. Fusion Engines for Multimodal Input: A Survey
Denis Lalanne, Laurence Nigay, Philippe Palanque, Peter Robinson, Jean Vanderdonckt, Jean-François Ladry
2. A Fusion Framework for Multimodal Interactive Applications
Hildeberto Mendonça, Jean-Yves Lionel Lawson, Olga Vybornova, Benoit Macq, Jean Vanderdonckt
3. Benchmarking Fusion Engines of Multimodal Interactive Systems
Bruno Dumas, Rolf Ingold and Denis Lalanne
4. Temporal Aspects of CARE-based Multimodal Fusion: From a Fusion Mechanism to Composition Components and WoZ Components
Marcos Serrano and Laurence Nigay
5. Formal Description Techniques to Support the Design, Construction and Evaluation of Fusion Engines for SURE (Safe, Usable, Reliable and Evolvable) Multimodal Interfaces
Jean-François Ladry, David Navarre, Philippe Palanque
6. Multimodal Inference for Driver-Vehicle Interaction
Tevfik Metin Sezgin, Ian Davis, Peter Robinson

12:30 Lunch

Location: Main lobby

14:00 Gaze, Gesture, and Reference (Oral)

Location: Bartos theatre

Session Chair: *Louis-Philippe Morency, University of Southern California*

1. Multimodal Integration of Natural Gaze Behavior for Intention Recognition During Object Manipulation
Thomas Bader, Matthias Vogelgesang, Edmund Klaus
2. Salience in the Generation of Multimodal Referring Acts
Paul Piwek
3. Communicative Gestures in Coreference Identification in Multiparty Meetings
Tyler Baldwin, Joyce Y. Chai, Katrin Kirchhoff

15:30 Coffee break

Location: Lower lobby

16:00- Demonstration Session

17:30 Locations: Lower lobby and Wiesner room (2nd floor)

Demo Chairs: *Denis Lalanne, University of Fribourg*

Enrique Vidal, Polytechnic University of Valencia

- Realtime Meeting Analysis and 3D Meeting Viewer Based on Omnidirectional Multimodal Sensors *Kazuhiro Otsuka, Shoko Araki, Dan Mikami, Kentaro Ishizuka, Masakiyo Fujimoto, Junji Yamato*
- Guiding Hand *Nalini Vishnoi, Cody Narber, Zoran Duric, Naomi Lynn Gerber*
- A Multimedia Retrieval System Using Speech Input *Andrei Popescu-Belis, Peter Poller, Jonathan Kilgour*
- Navigation With a Passive Brain Based Interface *Jan B.F. van Erp, Peter J. Werkhoven, Marieke E. Thurlings, Anne-Marie M. Brouwer*
- A Multimodal Predictive-Interactive Application for Computer Assisted Transcription and Translation *Vicent Alabau, Daniel Ortiz, Verónica Romero, Jorge Ocampo*
- Multi-Modal Communication *Victor S. Finomore, Dianne Popik, Douglas Brungart, Brian D. Simpson*
- HephaisTK: A Toolkit for Rapid Prototyping of Multimodal Interfaces *Bruno Dumas, Denis Lalanne, Rolf Ingold*
- State, an Assisted Document Transcription System *David Llorens, Andrés Marzal, Federico Prat, Juan Miguel Vilar*
- Demonstration - First Steps in Emotional Expression of the Humanoid Robot Nao *Jérôme Monceaux, Joffrey Becker, Céline Boudier, Alexandre Mazel*
- WiiNote: Multimodal Application Facilitating Multi-User Photo Annotation Activity *Elena Mugellini, Maria Sokhn, Stefano Carrino, Omar Abou Khaled*

9:00 PASCAL Keynote Address:

Are Gesture-based Interfaces the Future of Human Computer Interaction?

Frédéric Kaplan, EPFL

Location: Bartos theatre

Session Chair: *James Crowley, INRIA Grenoble Rhones-Alpes Research Center*

Abstract:

The historical evolution of human machine interfaces shows a continuous tendency towards more physical interactions with computers. Nevertheless, the mouse and keyboard paradigm is still the dominant one and it is not yet clear whether there is among recent innovative interaction techniques any real challenger to this supremacy. To discuss the future of gesture-based interfaces, I shall build on my own experience in conceiving and launching QB1, probably the first computer delivered with no mouse or keyboard but equipped with a depth-perceiving camera enabling interaction with gestures. The ambition of this talk is to define more precisely how gestures change the way we can interact with computers, discuss how to design robust interfaces adapted to this new medium and review what kind of applications benefit the most from this type of interaction. Through a series of examples, we will see that it is important to consider gestures *not* as a way of emulating a mouse pointer at a distance or as elements of a “vocabulary” of commands, but as a new interaction paradigm where the interface components are organized in the user’s physical space. This is a shift of reference frame, from a metaphorical virtual space (e.g. the desktop) where the user controls a representation of himself (e.g. the mouse pointer) to a truly user-centered augmented reality interface where the user directly touches and manipulates interface components positioned around his body. To achieve this kind of interactivity, depth-perceiving cameras can be relevantly associated with robotic techniques and machine vision algorithms to create a “halo” of interactivity that can literally follow the user while he moves in a room. In return, this new kind of *intimacy* with a computer interface paves the ways for innovative machine learning approaches to context understanding. A computer like QB1 knows more about its user than any other personal computer so far. Gesture-based interaction is not a mean for replacing the mouse with cooler or more intuitive ways of interacting but leads to a fundamentally different approach to the design human-computer interfaces.

Bio:

Frédéric Kaplan worked ten years as a researcher in Sony Computer Science Laboratory in Paris. Since 2006, he leads a research group at the CRAFT laboratory at EPFL in Switzerland focusing on interactive furniture, robotic objects and novel interfaces. He also founded OZWE, a spin-off of this laboratory commercializing new kinds of computers. He is the author of about 100 scientific articles and several popular science books. His robots and interfaces have been exhibited in several museums including the Centre Pompidou in Paris and the Museum of Modern Art in New York. His website is <http://www.fkaplan.com>

10:00 Coffee break

Location: Lower lobby

10:30 Doctoral Spotlight (Oral)

Location: Bartos theatre

Session Chair: *Michael Johnston, AT&T Research Labs*

1. Providing Expressive Eye Movement to Virtual Agents

Zheng Li, Xia Mao, Lei Liu

2. Mediated Attention with Multimodal Augmented Reality

Angelika Dierker, Christian Mertes, Thomas Hermann, Marc Hanheide, Gerhard Sagerer

3. Grounding Spatial Prepositions for Video Search

Stefanie Tellex, Deb Roy

4. Multi-Modal and Multi-Camera Attention in Smart Environments

Boris Schauerte, Jan Richarz, Thomas Plötz, Christian Thurau, Gernot A. Fink

12:30 Lunch

Location: Main lobby

14:00 Multimodal Devices and Sensors (Oral)

Location: Bartos theatre

Session Chair: *David Demirdjian, Toyota Research Institute*

1. RVDT: A Design Space for Multiple Input Devices, Multiple Views and Multiple Display Surfaces Combination

Rami Ajaj, Christian Jacquemin, Frédéric Vernier

2. Learning and Predicting Multimodal Daily Life Patterns from Cell Phones

Katayoun Farrahi, Daniel Gatica-Perez

3. Visual Based Picking Supported By Context Awareness

Hendrik Iben, Hannes Baumann, Carmen Ruthenbeck, Tobias Klug

15:30 Coffee break

Location: Lower lobby

16:00 Multimodal Applications and Techniques (Poster)

Location: Lower lobby

Session Chair: *Rainer Stiefelwagen, Karlsruhe Institute of Technology & Fraunhofer IITB*

- Adaptation from Partially Supervised Handwritten Text Transcriptions *Nicolás Serrano, Daniel Pérez, Albert Sanchis, Alfons Juan*
- Recognizing Events with Temporal Random Forests *David Demirdjian, Chenna Varri*
- Activity-aware ECG-based Patient Authentication for Remote Health Monitoring *Janani C. Sriram, Minh Shin, Tanzeem Choudhury, David Kotz*
- GaZIR: Gaze-based Zooming Interface for Image Retrieval *László Kozma, Arto Klami, Samuel Kaski*
- Voice Key Board: Multimodal Indic Text Input *Prasenjit Dey, Ramachandrudra Sitaram, Rahul Ajmera, Kalika Bali*
- Evaluating the Effect of Temporal Parameters for Vibrotactile Saltatory Patterns *Jukka Raisamo, Roope Raisamo, Veikko Surakka*
- Mapping Information to Audio and Tactile Icons *Eve Hoggan, Roope Raisamo, Stephen A. Brewster*
- Augmented Reality Target Finding Based on Tactile Cues *Teemu Tuomas Ahmaniemi, Vuokko Tuulikki Lantz*

Doctoral Spotlight (Poster)

Location: Lower lobby

Session Chair: *Daniel Gatica-Perez, Idiap Research Institute*

- Speaker Change Detection with Privacy-Preserving Audio Cues *Sree Hari Krishnan Parthasarathi, Mathew Magimai.-Doss, Daniel Gatica-Perez, Hervé Bourlard*
- Providing Expressive Eye Movement to Virtual Agents *Zheng Li, Xia Mao, Lei Liu*
- Mediated Attention with Multimodal Augmented Reality *Angelika Dierker, Christian Mertes, Thomas Hermann, Marc Hanheide, Gerhard Sagerer*

Doctoral Spotlight (Continued)

- Grounding Spatial Prepositions for Video Search *Stefanie Tellex, Deb Roy*
- Multi-Modal and Multi-Camera Attention in Smart Environments *Boris Schauerte, Jan Richarz, Thomas Plötz, Christian Thureau, Gernot Fink*
- MirrorTrack - Tracking with Reflection - Comparison with Top-Down Approach *Yannick Verdie, Bing Fang, Francis Quek*
- A Framework for Continuous Multimodal Sign Language Recognition *Daniel Kelly, Jane Reilly Delannoy, John Mc Donald, Charles Markham*
- Discovering Group Nonverbal Conversational Patterns with Topics *Dinesh Babu Jayagopi, Daniel Gatica-Perez*
- Learning and Predicting Multimodal Daily Life Patterns from Cell Phones *Katayoun Farrahi, Daniel Gatica-Perez*

17:30- Town Hall Meeting

18:30 Location: Bartos Theatre

Workshop on Use of Context in Vision Processing

Location: Wiesner Room (2nd floor)

- Organizers:
- Hamid Aghajan
 - Ralph Braspenning
 - Yuri Ivanov
 - Louis-Philippe Morency
 - Anton Nijholt
 - Maja Pantic
 - Ming-Hsuan Yang

9:30 Use of Context in Vision Processing

Hamid Aghajan et al.

9:50 **Invited Talk:**

Understanding Visual Scenes

Antonio Torralba, Massachusetts Institute of Technology

10:50 Coffee break

Location: Lower lobby

11:15 Context-aware Classification for Incremental Scene Interpretation

Arne Kreutzmann, Kasim Terzic, and Bernd Neumann

11:45 Intelligent Headlight Control Using Camera Sensors

Ying Li and Sharath Pankanti

12:15 Lunch

14:00 **Invited Talk:**

Honest Signals: Social Context in Visual Processing

Alex (Sandy) Pentland, Massachusetts Institute of Technology

15:00 Data-driven Context Representation for Head Gesture Recognition during Multi-Party Interaction

Louis-Philippe Morency

15:30 Coffee break

Location: Lower lobby

16:00 Using Context with Statistical Relational Models - Object Recognition from Observing User Activity in Home Environment

Chen Wu and Hamid Aghajan

16:30 Discussion and Closing

**The 2nd Workshop on
Child, Computer and Interaction**

- Organizers:
- Kay Berkling
 - Diego Giuliani
 - Shrikanth Narayanan

Location: Bartos Theatre

9:00 Welcome Message

Shrikanth Narayanan

9:15 Invited talk:

Conversations with a Virtual Science Tutor in Multimedia Learning Environments *Wayne Ward and Ronald Cole*

Session chair: *Shrikanth Narayanan*

10:15 Oral session I

Session chair: *Elmar Nöth*

1. Fantasy, Curiosity and Challenge as Adaptation Indicators in Multimodal Dialog Systems for Preschoolers *Theofanis Kannelis, Alexandros Potamianos, Georgios N. Yannakakis*
2. Comparison of Child-Human and Child-Computer Interactions based on Manual Annotations *Matthew Black, Jeannette Chang, Jonathan Chang, Shrikanth Narayanan*

10:55 Coffee break

Location: Lower lobby

11:20 Oral Session II

Session chair: *Elmar Nöth*

1. Interacting with Stories *Ashley Robinson, Chao Peng, Francis Quek, Yong Cao*
2. Whole Body Interaction for Child-Centered Multimodal Language Learning *Alberto Gonzalez, John Borland, Kathleen Geraghty*
3. Automatic Childhood Autism Detection by Vocalization Decomposition with Phone-like Units *Dongxin Xu, Jeffrey Richards, Jill Gilkerson, Umit Yapanel, Sharmistha Gray, John Hansen*
4. Towards a Language-independent Intelligibility Assessment of Children with Cleft Lip and Palate *Tobias Bocklet, Andreas Maier, Korbinian Riedhammer, Elmar Nöth*
5. A Review of ASR Technologies for Children's Speech *Matteo Gerosa, Diego Giuliani, Shrikanth Narayanan, Alexandros Potamianos*

13:00 Lunch

14:30 Poster session I

Location: Lower lobby

Session chair: *Diego Giuliani*

- Assessing the Stress/Neutral Speech Environment in Adult/Child Interactions for Applications in Child Language Development (PP1) *Sanjay Patil, John Hansen, Jill Gilkerson, Sharmistha Gray, Dongxin Xu*
- Automatic Classification of Reading Disorders in a Single Word Reading Test (PP2) *Andreas Maier, Stefanie Horndasch, Elmar Nöth*
- Robustness Optimization of a Speech Interface for Child-Directed Embedded Language Tutoring (PP3) *Oliver Jokisch, Horst-Udo Hain, Rico Petrick, Rüdiger Hoffmann*
- Avoiding Speaker Variability in Pronunciation Verification of Children's Disordered Speech (PP4) *Oscar Saz, Eduardo Lleida, W.-Ricardo Rodriguez*
- Comparing Child and Adult Language: Exploring Semantic Constraints (PP5) *Ismail El Maarouf, Farida Saïd, Jeanne Villaneau, Dominique Duhaut*
- Pilot Experiments on Children's Voice Recording (PP6) *Sawit Kasuriya and Alistair D. N. Edwards*
- Recognizing Child's Emotional State in Problem-Solving Child-Machine Interactions (PP7) *Serdar Yildirim, Shrikanth Narayanan*

15:15 Poster session II

Location: Lower lobby

Session chair: *Kay Berking*

- Learning Meaningful Units from Multimodal Input and the Effect of Interaction Strategies (PP8) *Louis ten Bosch, Lou Boves, Okko Räsänen*
- Child Selection of Learning Methods: A Corpus Based on Real-World Data (PP9) *Heikki Ruuska, Shinya Kiriya, Yoichi Takebayashi*
- Preliminary Study of Stress/Neutral Detection on Recordings of Children in the Natural Home Environment (PP10) *Umit Yapanel, Dongxin Xu, John Hansen, Sharmistha Gray, Jill Gilkerson, Jeffrey Richards*
- From Competitive to Social Two-player Videogames (PP11) *Jesús Ibáñez Martínez, Carlos Delgado-Mata*
- Incorporating Music into the Study of Algorithms and Computer Programming (PP12) *Takeo Tatsumi, Yoshiaki Nakano, Kiyoshi Tajitsu, Haruhiko Okumura, Yasunari Harada*
- An Automatic Screening Test for Preschool Children: Theory and Data Collection (PP13) *Tobias Bocklet, Cordula Winterholler, Andreas Maier, Maria Schuster, Elmar Nöth*
- Upper Limb Rehabilitation and Evaluation of Children Using a Humanoid Robot (PP14) *Douglas Brooks, Ayanna Howard*

16:00 Coffee break

Location: Lower lobby

16:15- Brain Storming Session

18:30 Session chair: *Alexandros Potamianos*

**Workshop on Affective-aware
Virtual Agents and Social Robots**

Location: Wiesner Room (2nd floor)

Organizers:

- Jean-Claude Martin
- John Murray
- Ginevra Castellano
- Kostas Karpouzis
- Christopher Peters

9:00 Welcome

9:15 Session “Theories and Data”

1. An Exploration of User Engagement in HCI *Christopher Peters, Ginevra Castellano, Sara de Freitas*
2. A Natural Head Pose and Eye Gaze Dataset *Stylianos Asteriadis, Dimitris Soufleros, Kostas Karpouzis*
3. Hybrid Text Affect Sensing System for Emotional Language Analysis *Rafael del-Hoyo, Isabelle Hupont, Francisco J. Lacueva and David Abadia*

10:45 Coffee break

Location: Lower lobby

11:15 Session “Affective Interaction with Virtual Characters”

1. Appraising Emotional Events during a Real-time Interactive Game *Matthieu Courgeon, Celine Clavel, Jean-Claude Martin*
2. Towards an Intelligent Affective Multimodal Virtual Agent for Uncertain Environments *Isabelle Hupont, Rafael Del-Hoyo, Sandra Baldassarri, Eva Cerezo, Francisco J. Seron and Diego Romero*
3. Expressive Virtual Modalities for Augmenting the Perception of Affective Movements *Alexis Clay, Matthieu Courgeon, Nadine Couture, Elric Delord, Celine Clavel, Jean-Claude Martin*

12:45 Lunch

14:00 Session “Affective Interaction with Robots”

1. Designing a Game Companion for Long-Term Social Interaction *Iolanda Leite, Ginevra Castellano, Andre Pereira, Carlos Martinho, Ana Paiva, P.W. McOwan*
2. A Wizard-of-Oz game for collecting emotional audio data in a children-robot interaction *Agnes Delaborde, Marie Tahon, Claude Barras, Laurence Devillers*
3. An Integrated Approach to Emotional Speech and Gesture Synthesis in Humanoid Robots *Philipp Robbel, Mohammed E. Hoque, Cynthia Breazeal*
4. Postural Expressions of Emotion in Motion Captured Database and in a Humanoid Robot *Andrea Kleinsmith, Issam Rebai, Nadia Berthouze, Jean-Claude Martin*

15:30 Coffee break

Location: Lower lobby

16:15 Session “Affective Interaction with Robots” (continued)

5. Evaluating Emotional Algorithms using Psychological Scales *Shangfei Wang, Xufa Wang*

16:45 Discussion and closing

Workshop on Multimodal Sensor-Based Systems and Mobile Phones for Social Computing

Location: Bartos Theatre

- Organizers:
- Daniel Olguin Olguin
 - Taemie Kim
 - Benjamin Waber
 - Anmol Madan
 - Alex (Sandy) Pentland

9:00 **Invited talk:**

Marta Gonzalez

9:30 SocialCircuits: The Art of Using Mobile Phones for Modeling Personal Interactions

Iolanthe Chronis, Anmol Madan, Alex (Sandy) Pentland

10:00 Word-of-Mouth Algorithms What You Don't Know Will Hurt You

Manuel Cebrian, Enrique Frias-Martinez

10:30 **Invited talk:**

Daniel Gatica-Perez

11:00 Coffee break

Location: Lower lobby

11:15 Predicting Remote Versus Collocated Group Interactions using Non-verbal Cues

Dairazalia Sanchez-Cortes, Dinesh Babu Jayagopi, Daniel Gatica-Perez

11:45 Sensor-Based Organizational Engineering

Daniel Olguin-Olguin, Alex (Sandy) Pentland

12:15 Studying Communication in Agile Software Development. A Research Framework and Pilot Study

Tuomas Niinimäki, Arttu Piri, Peitsa Hynninen, Casper Lassenius

12:45 **Invited talk:**

Asu Osdaglar

13:15 Interaction Pattern and Motif Mining Method for Doctor-Patient Multi-Modal Dialog Analysis

Kenji Mase, Yuichi Sawamoto, Yuichi Koyama, Tomio Suzuki, Kimiko Katsuyama

Restaurants

A. Legal Sea Foods

5 Cambridge Ctr, Cambridge, MA
(617) 864-3400

B. MexiCali Burrito Co.

500 Technology Square, Cambridge, MA
(617) 225-2777

C. Quiznos

600 Technology Sq, Cambridge, MA
(617) 225-7827

D. Tommy Doyles Irish Pub-Restaurant

1 Kendall Sq # 100, Cambridge, MA
(617) 225-0888

E. Damons Restaurant

3 Cambridge Ctr, Cambridge, MA
(617) 225-2472

F. Amelia S Trattoria

111 Harvard St, Cambridge, MA
(617) 868-7600

G. Blue Room

1 Kendall Sq # B2001, Cambridge, MA
(617) 494-9034

H. Emma's Pizza

40 Hampshire St, Cambridge, MA -
(617) 864-8534

I. Cambridge Brewing Co Inc

1 Kendall Sq # 100, Cambridge, MA
(617) 494-1994

J. Bertucci's Brick Oven Restaurant

799 Main St, Cambridge, MA -
(617) 661-8356

K. Rebecca's Cafe

290 Main St, Cambridge, MA
(617) 494-6688

L. Sbarro Italian Eatery

3 Cambridge Ctr, Cambridge, MA
(617) 494-9009

M. Au Bon Pain

245 Main St, Cambridge, MA
(617) 491-9751

N. Cosi

290 Main St, Cambridge, MA
(617) 868-5810

O. Hearthstone Partners

290 Main St, Cambridge, MA
(617) 868-5810

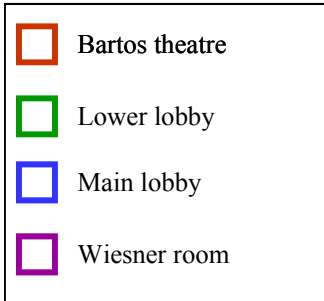
P. Bei Jing & Toyko

3 Cambridge Ctr, Cambridge, MA
(617) 252-0788

Q. Black Sheep Restaurant

350 Main St, Cambridge, MA
(617) 577-1300

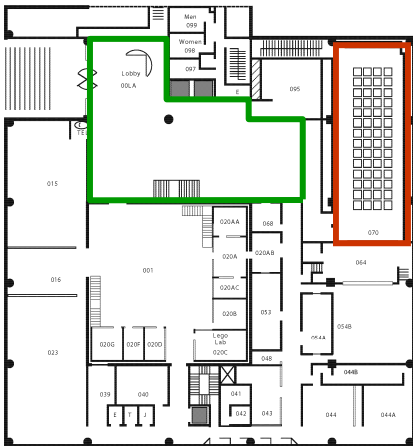
Main venues



Second floor



Lower level



Ground floor

