



**chist-era**



# CHIST-ERA Projects Seminar

## Day 2, Cross Topics

### *Topic IUI*

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FUNDING OPPORTUNITIES from the

FUTURE & EMERGING TECHNOLOGIES scheme





- ❖ **eGlasses – The interactive eyeglasses for mobile, perceptual computing**
- ❖ **IMOTION – Intelligent Multimodal Augmented Video Motion Retrieval System**
- ❖ **JOKER – JOKe and Empathy of a Robot/ECA: Towards social and affective relations with a robot**

⇒ **Quite diverse set of IUI applications and technologies.**

**What is intelligent in these UIs?**



## ❖ **eGlasses**

- ✓ new ways of using existing technology
- ✓ comprehensive and adaptive user models

## ❖ **JOKER**

- ✓ communication model, expressive synthesis
- ✓ Context

## ❖ **iMOTION**

- ✓ multiple modes of interaction
- ✓ switching modes



# Upcoming challenges and needs

- ❖ **User Models - need to be comprehensive & adaptive (learn from previous mistakes)**
- ❖ **Data Needs (Modeling & Evaluations) – both representativeness & good annotations**
  - ✓ Methodologies for annotations.
  - ✓ Methodologies for getting user needs.
  - ✓ Challenge of privacy / ethics / reproducibility
  - ✓ ML methodologies for limiting needs (transfer learning, active learning, ...), making previously unpractical things practical.
  - ✓ In context evaluations
- ❖ **Deep Learning**
  - ✓ Possible loss of application focus.
  - ✓ Still little contribution of DL from IUI point of view.



## ❖ Interaction Modes

- ✓ Quite comprehensive range of modes identified already in the call (voice, dialogue, sketch, tangible, haptic, body, gaze, augmented reality, BCI, traditional interfaces, ...)
  - **Automatic selection of most effective fusion given context/user/application.**
  - **Get these mode work in natural contexts & ambiguity.**
  - **Grounding.**
  - **Assistive technologies.**

## ❖ Information Visualization

- ✓ IUI are inherently interactive

## ❖ Interaction between technology development and user behaviour changes

- ✓ Acceptance, accustomization, learn from early failures, etc...



## ❖ **Proactive/predictive interfaces**

- ✓ Sensing Context and Human
- ✓ Special needs

# Upcoming challenges and needs





## ❖ Milestones

- ✓ Behavioural model
  - User needs
  - Ethical aspect
  - List of user actions
  - Sensing and tracking, etc.
- ✓ Cognitive model. Long term model: needs, personality, interests?
- ✓ Collective and social interactions.
- ✓ Adaptive modeling.
- ✓ Predictive modeling.
- ✓ Big challenges and societal needs.





- ❖ **Open ended**
- ❖ **Community consultations**
- ❖ **New EU partnerships**
- ❖ **Synergies through consortia**
  
- ❖ **Keep main differentiator: fully understanding a problem (academia) vs. finding solutions quick enough (industry)**
- ❖ **Support for research on proactive interaction**
- ❖ **Knowledge transfer “dating agency” or “mapping” of actors**



# Questions ?