

Thesis Proposal, Project insitul, INRIA Futurs

Author: Wendy Mackay

Title: Mediated remote communication

Project: insitul, INRIA Saclay – Île-de-France

Description:

The INSITU research team has been exploring mediated communication for over a decade. The EU interLiving project developed a suite of devices of varying bandwidth to explore multi-scale communication among remote family and friends. The Digiscope project will provide a unique opportunity to extend these ideas to address remote communication across multi-surface interactive environments featuring interactive tables and wall-sized displays. The goal of this thesis is to design and evaluate new technologies and to develop theoretical principles for mediated remote communication. The student will create interaction and communication techniques that address use of context, diverse bandwidth, accommodating asymmetry and co-adaptive designs.

Context: Communication depends upon context: Location, culture, language, and relationship affect the meanings of words and gestures. The goal is to take context explicitly into account to facilitate more effective and close communication.

Bandwidth: Remote communication spans a range from minimal to rich media. The former involves meaningful, “emotional proxies” that communicate complex messages through simple actions. The latter creates high-bandwidth, shared immersive experiences, as in the Digiscope project. The goal is to explore the effects of each and support graceful degradation between extremes.

Asymmetry: Users often have asymmetrical relationships, with access to different bandwidths or modes of communication. The goal is to explore how to provide effective communication despite such asymmetries.

Co-adaptation: Users both adapt to interfaces and adapt them for new purposes. Using diverse approaches including multimedia, tangible devices and interactive paper, the goal is to let users define their own forms of communicative interaction and collaboratively modify it over time.

Description of thesis activities:

- Conduct participatory design activities with users
- Develop remote collaboration technologies
- Conduct laboratory experiments and field studies
- Develop theoretical principles and design guidelines

Competencies and skills required:

The ideal candidate should have completed a Master's degree Computer Science with a focus in Human-Computer Interaction. Experience with user-oriented design methods, particularly prototyping and participatory design is required and a background in mediated remote communication or tele-presence is welcome. The student should enjoy working closely with users, understand system architectures, have software development experience and a background in scientific evaluation methods.

Researchers to contact for more information:

Wendy Mackay, insitul, INRIA Saclay – Île-de-France (mackay@lri.fr)