

## **Improving Human-Robot Communication with Mixed-Initiative and Context-Awareness co-located with Ro-Man 2009**

*Workshop date and location: September 28, 2009 - Toyama International Conference Center, Japan*

This one-day workshop addresses mixed-initiative communication and context-awareness in human-robot interaction. Although these topics are investigated in isolation, a combined view of both aspects is often lacking when designing a human-robot interface. So, a potential quality improvement of the user interface is neglected.

For example, a robot that will be capable of indicating a product to the user in a supermarket [1] would require awareness of the localization. Another example would be a robot trolley used as a walking aid by an impaired person capable of recognizing crowded areas and decide to avoid them. We can also think of disabling the speech input and output modality if there is too much noise. Such kind of interaction which involves mixed-initiative supports a more "natural" human-robot interaction. Context-awareness is also needed in order to decide which initiative is meaningful for the user.

In this workshop we take both concepts into consideration in an integrated manner. Our discussion process focuses on how this combination may lead to better user interface design. As many issues are still not resolved, we initiate an in-depth discussion in order to gain more insight.

The following pages collect extended abstracts by those authors, who presented their currently ongoing research during the workshop. We would like to thank the reviewers from the PPPJ program committee, the authors for sharing their ideas with fellow researchers, as well as everyone at the conference whose participation in the following discussions made the session a success.

Dominik Ertl, Anders Green, Helge Hüttenrauch and Frederic Lerasle

[1] Kaindl, H., Falb, J., Bogdan, C.: Multimodal communication involving movements of a robot," CHI '08 extended abstracts on Human factors in computing systems, 2008, pp. 3213 - 3218