Helping visually impaired in social interaction

Helping visually impaired people in social interactions scenarios includes communicating the useful information about people in the group to the blind user in an effective manner. This information can help the blind user in his interaction with people in a very effective way. The useful visual cues e.g., who is present, who is looking at me, if someone is talking to me, what are the facial expressions etc. need to be delivered to the visually impaired in real time in an effective as well as non-intrusive way. Conveying a lot of information continuously to a user is very challenging. Investigating appropriate user interfaces such as haptic or audio is urgently needed.

The topic of this thesis is to investigate ways that can help building such a system. The investigation will specifically be focused on designing this interface i.e., integrating the visual cues like facial identification, expression and head orientation/gaze onto a common framework. Furthermore investigating a more useful way of communicating this to a combination of output devices (audio, haptic) worn by the blind user is required. The main challenge is to find and research ways that can decide WHAT information will WHEN be transferred on WHICH output device. This goal will be achieved by also including conducting user surveys with real-time tests involving visually impaired users.

Design considerations:
- Which information to present when
- Which output devices to use for a given input
- Integrating platform.
- Develop a working application for blind users.

Requirements:
- Good programming skills
- Interest in usability and accessibility
- Willing to work with handicaped people

For more information and details, please contact:

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