Workshop on Speech & Language Processing for Assistive Technologies

Demo Session

1 "How was School today...?" A Prototype System that uses a Mobile Phone to Support Personal Narrative for Children with Complex Communication

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We will show a sensor based mobile phone prototype that supports personal narrative for children with complex communication needs. We will demonstrate how the phone is used to capture voice recordings and information about location, people and objects using RFID tags and QR stickers. The challenging environment of a special school for prototype testing will be discussed using real life experiences.

2 The PhonicStick: Interactive access to sounds for people with Complex Communication Needs

Ha Trinh, Annalu Waller, Rolf Black,
James Bennet
(University of Dundee)

The PhonicStick is a new sound-based speech generating device which enables nonspeaking individuals to access 42 English sounds and blend sounds into spoken words. The device can potentially be used both as a literacy learning tool and an interactive communication aid for people with literacy difficulties. We will discuss how NLP technologies, such as speech synthesis and predictive techniques, are utilised to improve the usability of the device.

3 Toby Churchill Ltd

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Lightwriter® SL40. We will show one of the new SL40 Connect mobile phone enabled Lightwriters®. Lightwriters® are portable text-to-speech devices with dual displays, one facing the user and a second out-facing display allowing natural face-to-face communication. They are operated by keyboard and use a fast prediction system based on the user's own vocabulary. A certain degree of literacy is required to operate a Lightwriter®.

Lightwriter® SL40 with PhonicStick. We will show an SL40 development unit that is running a version of Dundee University's PhonicStick software. This project is an ongoing collaboration with the Assistive and Healthcare Technologies group in the School of Computing at Dundee.

VIVOCA. We will be describing a project with partners including the University of Sheffield and the Assistive Technology team at Barnsley District General Hospital. The project is developing and evaluating a novel device for supporting the communication needs of people with severe speech impairment that will address the limitations of the current technology. It builds on previous work by this team (funded by Neat) which has established user requirements and identified the technical developments required. The device, a Voice Input Voice Output Communication Aid (or VIVOCA) will take as input the unintelligible disordered speech of the users.

4 SceneTalker: An Utterance-Based AAC System Prototype

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SceneTalker is a prototype utterance-based augmentative and alternative communication system that uses scripts (and scenes within scripts) to organize prestored messages for highly routine goal-oriented public situations (such as going to a restaurant). Many aspects of the system design are inspired by a series of experiments on using prestored utterances in public goal-oriented situations when the prestored message did not exactly match what the user wanted to say. In addition to the script structures, we show system messages that are not anticipated to be perfect/complete for what is needed and strategies of use with stored messages that anticipate the communication partner's follow-up to utterances (adjacency pairs).

5 SIGHT System

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The SIGHT system is intended to give people with visual impairments access to information graphics (e.g., bar charts) found in popular media. The system generates a textual summary that provides the chart's overall intended message and additional salient propositions conveyed by the graphic.