A companion agent called Betty

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Tell me about Einstein's theory of relativity

Speak:

Briefly, Einstein's theory of relativity means the theory that space and time are relative concepts rather than absolute.

The CA evolved into a speaking avatar, displaying the user utterance and CA response as text on the screen. This helped with visualization of the conversation.

System architecture

Ontology of Reminiscence

The CA system consists of data imported from WordNet with a reminiscence ontology. The definition of meaning in WordNet is words that are synonyms in some particular context. Such a collection in WordNet is called a synset. Since words can have multiple meanings (and be multiple parts of speech), the flags of a word are a summary of all of the properties it might have and it has a list of entries called ‘meanings’. Each entry is a ‘meaning’ and points to the circular list, one of which marks the word you land at as the synset head. This is referred to as the ‘master’ meaning and has the gloss (definition) of the meaning. The meaning list of a master node points back to all the real words which comprise it.

Since WordNet has an ontology, as synsets are hooked to other synsets in various relations, particular of that of parent and child. The CA represents these as facts. The hierarchical relationship uses the verb 'is' and has the child as subject and the parent as object.

Adaptive narrative

The ability to generate narrative is of importance to computer systems that wish to use reminiscence effectively for a wide range of contexts ranging from entertainment to training and education. The typical approach for incorporating narrative into a computer system is for system builders to script the narrative elements into the system. This CA uses an ontology to generate the context and topics from the conversation logs using keywords, concepts and wireframes.

Improvement of mood can result from speaking with the CA

What is your name: Collette

Betty: Glad you came back, collette:

The CA has a standard response mechanism to deal with off-topic user utterances. This is known as the ELIZA layer.

Results

The use of standard instruments such as the Everyday Memory Questionnaire (EMQ) [10] both before and after the application of the CA will inform whether there is a noticeable difference in cognitive ability after use of the CA. Standard instruments can be used to screen for cognitive impairment. They can establish the severity of cognitive impairment at a specific time and to follow the course of cognitive changes in an individual over time, thus making these instruments an effective method to document the individual’s response to any intervention. The EMQ is used as a subjective measure of memory failure in everyday life. This more direct assessment of the errors experienced by older adults during their daily activities may be more useful for directing the research into developing an intervention that will have a practical impact. Well-being can be tested with a range of mood assessment techniques including self-reporting measures. These could be collected to show levels of satisfaction within the system.

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References