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Abstract

The development of semantic intelligence interfaces capable of extracting data from speeches and converting structured texts into voice will be the next paradigm of intelligent interfaces for ambient assisted living (AAL). Nowadays some of these devices like touchpads have microphones and speakers. So we have another type of interface that could use voice to communicate on both directions. The usage of microphones as an interface with the software applications has a great advantage of not having the constraints of using the hands to communicate with the device. This will improve the accessibility and ubiquity of the solution and could also improve its efficiency and effectiveness. Sometimes this could be crucial for our propose if for instance the user is unable to reach the mobile device or if the user cannot use the hands. There are some devices that use voice commands to trigger some actions. The cell phones contact lists can be an example of that. However if the user is reporting a situation like for example if a nurse is assisting a patient and is reporting the nursing interventions the system must have the intelligence to recognize the speech, translate it into text and then retrieve information from the text. There are some libraries with application programming interfaces for different platforms that can be integrated to acquire voice speech and convert it into text. Our main aim is to convert free text into structured expressions and to convert these expressions in normalized terms. We intend to use intelligent agents to achieve this goal. This study explores some methodologies and techniques of extracting expressions and relating them with normalized terms and ontologies. With these techniques it will be possible to promote better systems to promote AAL, conducting epidemiologic studies and increase the patients' safety.

Keywords: interfaces, semantic, AAL, intelligence, ontologies