Predicting Relevant Events in the Life of a Person with Alzheimer[*]

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The number of people who are suffering from dementia and its most common form Alzheimer, increased significantly during the last years. One of the consequences of the Alzheimer's disease is the social isolation. The patients start to avoid their friends and family. With our project we aim to maintain the patients social active. Our approach is based on the automatic gathering of relevant contextual information in the patient's smartphone, such as, GPS indoor and outdoor location, pictures the patient explicitly takes and activity recognition through the use of the accelerometer, and enhance the creation capabilities of assistive technologies. The data collected from the smartphone will be used as an input for the inference motor. This motor will use machine learning techniques to build classifiers trained with previously curated data from the patient. The classifiers will aim at identifying life events with new data collected from the smartphone. As these events are detected by the inference motor, they are stored on a semantic network. The system will monitor the knowledge base and try to complete missing information by using free available online sources such as Google Maps or Wikipedia. Hereby, the user's location during the day can be described more detailed including information about the type of the place, the address or pictures of the visited haunts. However, since some of this very personal information can only be understood within a context and is in most cases only known by the patient's social contacts, a validation of the automatically retrieved data is required. Therefore, questions are posted on a social network site to ensure the retrieved data quality and moreover invite friends to enrich the won knowledge with additional media and more detailed information. This will provide the system with the power, together with the inference motor, to detect routines in the patient life. A routine can be seen as a sequence of life events. Defining a routine as a sequence of events provides the system with the capacity to identify regularities on the patient routine, or if he goes outside his routine alert the caregivers.

Acknowledgements

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