JTC 2017 - Ageing and Place in a digitising world

VoiceAdapt
Voice Adaptive Training for older adults with Aphasia

SUMMARY AND OVERALL AIM

Despite the prognosis that the aging population is expected to have on increasing stroke prevalence, current advances in the availability of digital technologies for aphasia rehabilitation provide hope for those affected by this condition. VoiceAdapt project aims to empower elderly people with aphasia (PwA) by means of improving their communication capabilities and their daily communicative activity to attain greater levels of long-term recovery. To this end, we apply innovative speech-sensitive technology to application-based support & training of PwA in order to develop a system that detects and adapts to spoken language deficiencies that are typical signs and symptoms of aphasia. Building on existing speech training and adaptive testing approaches, at the core of the system is an intelligent personalization and adaptation engine that receives input from multiple data sources (language training application, voice and interaction pattern analysis) and dynamically adapts a) the multimodal interface of the application as well as b) the behaviour itself to individual mental states and cognitive capabilities, in particular with regard to their cognitive disabilities. Continuous involvement of PwA, their caregivers and medical experts during development leads the way to the conduction of a randomized controlled trial (RCT) with PwA to measure and monitor the impact of the developed adaptive training tool on participants´ linguistic abilities, communication habits and quality of life.

CONSORTIUM

The consortium consist of 5 partners from 3 countries:
1. Technische Universität Berlin (Germany)
2. Austrian Institute of Technology GmbH (Austria)
3. Nurogames GmbH (Germany)
4. University of Toronto (Canada)
5. University of Alberta (Canada)

WORK PACKAGES

WP1: Project management
Handle strategic and management, financial, non-technical and administrative coordination among project activities; ensure communication flow between Consortium and the JPC, guarantee quality and timely delivery of reports/outcomes, ensure user involvement fulfils highest ethical standards.

WP2: User Centred Design and Evaluations
Collect and analyse user and stakeholder needs and requirements and specify use cases and scenarios for adaptive traning for elderly PwA, identify functionalities, develop the concept for the use interface, interaction and guidelines for the implementation, as well as perform lab trials.

WP3: Adaptive Speech Technologies and Therapy
Deals with the setup of the technological infrastructure, the implementation of fronted infrastructure, backend logic, the adaptive user model, as well as the adaptive algorithms for content adaptation.

WP4: Randomized Controlled Trial
Plan and develop the RCT concept to analyse the impact of the VoiceAdapt app, build up the trial environment and materials, execute and systematically evaluate at 2 sites.

WP5: Dissemination and Exploitation
Ensure dissemination and exploitation of project results targeting the public in general, medical stakeholders, key market players and the scientific community, develop a dissemination and exploitation plan, business strategy and viable business model for exploitation.

PROJECT DURATION AND BUDGET

Project duration: 36 months
Project costs: €715.575