
MAYSAM
GHOVANLOO &
NAZMAS SAHADAT

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Required Skills:

MySQL, Java, C++, Human Centered Design, Project Management, Communications

Preferred Team Communications:

TBD

Data Sources:

First start with keyboard and mouse usage data of PC, touch data of tablet or phone. Other Items:

Other Items:

Project has timezone flexibility. Mentors and students will determine a good time for virtual meeting

USE OF EHR/FHIR TO COLLECT USAGE DATA ON THE MULTIMODAL TONGUE DRIVE SYSTEM AND PROVIDE DECISION SUPPORT TO CAREGIVERS, PATIENTS, AND FAMILIES

The multimodal Tongue Drive System (mTDS) is an assistive device, which can improve the quality of life of people with spinal cord injuries by allowing them to access computers, drive wheelchairs, phone, and control their environment using their speech, tongue motion and head movement. mTDS harnesses the power of the human tongue, a muscle which is unaffected by even the most severe injuries to the spinal cord and many other neurological diseases. It utilizes an innovative combined-computer interface that uses magnetic sensors to wirelessly track the motion of the user's tongue, within the oral cavity, inertial sensors to track head movement, microphone to capture speech and translate its motions into a set of commands that can be used to perform a multitude of tasks, including driving a wheelchair, controlling a cursor on a computer, smart phone or tablet. For more information visit:

http://www2.ece.gatech.edu/research/labs/gt-bionics/research_tds.shtml

PROJECT OBJECTIVES

As part of the mTDS development process, we would like to use the EHR/FHIR system to collect labeled usage data from a large number of end users in their home/office environments. The latest generation of mTDS is a wearable device that can access the WiFi network and internet through its accompanying smartphone. It is important for the caregivers, and assistive technology providers to know exactly how much and for what purposes the mTDS is being used in the users' (beta-testers) in their daily lives. An EHR-enabled app can collect such information and analyze this data to create usage trends for individual users and among different user populations with various levels of disability. This valuable information can provide decision support to caregivers, patients, and families to optimize the mTDS capabilities, and fine tune it to the needs and lifestyle of each individual user to maximize the mTDS usage and improve the users' quality of life.

SUCCESSFUL PROJECT

To be determined with Mentors.

Intellectual Property: TBD