

Theme : Artificial Intelligence

Subject : Predictive Analysis to Influence Behavioral Change using Biometrics Data

Introduction

Fitness/Wellness is becoming mainstream and there are many mobile healthcare products/apps that are available to collect information about an individual's health status. The proliferation of mobile healthcare devices is collecting more data than ever before. But, the question is what we can do with the data to help individuals achieve optimal health and provide preventive care. As consumers become more engaged and proactive, they can take charge of their own health, achieving improved wellness.

The goal of this research project is to develop a predictive analysis algorithm that utilizes the abundant non-invasive, continuous biometric sensor data to help people stay healthy and maintain a high quality of life by enabling continuous monitoring and by providing meaningful/actionable information about user's current and expected future health status. For example, based on the data gathered from a diabetic, the patient can be alerted that they may be headed toward a life-threatening situation if they do not take specific actions. Further, this life-saving reminder and future tips can lead to better patient outcomes through behavioral modification.

Scope

Challenges that significantly advance predictive analysis to change user behavior including:

- Aggregation of useful data from existing sensors as well as novel ones to monitor chronic illness
- Big data analysis of biometric data being collected
- Accurate predictive analysis model to provide early warning signs for serious illness

Research questions

We are interested in the following research questions. These questions are not exhaustive but different research questions are open to discuss with research partners.

- What are the key parameters that needs to be and can be monitored non-invasively and continuously in wearable form factor to achieve improved health management?
- How can sensor data collection be better utilized for accurate prediction of user's fitness/wellness and also to provide preventive care, providing early warning signs for serious illnesses?
- Any better ways of analyzing fitness/wellness data collected by various non-invasive sensors and represent data in more meaningful and user-friendly way, which will lead to changes in user behavior and have lasting impact on their life style?

Expected Deliverables

The following is open to discussion:

- Suggestion of new predictive analysis model based on non-invasive continuous biometric data
- Proof of concept and/or Prototype algorithm
- Patents with Samsung (if agreed)
- Detailed quarterly progress reports summarizing accomplishments