

Integrated Health Coach System

Arjan Durrezi

Department of Computer and Information Science, School of Science

Indiana University – Purdue University Indianapolis

Abstract

The primary motivation of our project is that, as much research has shown, for most chronic diseases simple lifestyle changes, such as diet and exercise, can be the most effective actions to ameliorate the condition. However, for most people such lifestyle changes become very difficult, if not impossible. Our Integrated Health Coach System will provide patients with immediate feedback regarding the results of their changes in diet and exercise. For example, the physical activity will be captured by the accelerometers implemented in the smart phone. The food used will be captured by the combination of smartphone camera and food description (by voice and text). In addition, the smartphone will record all medications and supplements the patient takes daily. Furthermore, in case of diabetes patients, the smartphone will collect the daily weight, as well as blood sugar levels and blood pressure. All this data will be stored and treated in a cloud computing application, which will correlate changes in diet and exercise to corresponding medical data. Such data will be shown to patients periodically, such that they can really see the concrete results of their actions. For example, one week of changes in diet and exercise would show considerable improvement in blood sugar levels. Alternatively, the application could show rising blood sugar levels in correspondence with lack of physical activity and an unhealthy diet. Such feedback will act as a strong motivator for people to continue with their changes in diet and exercise. The system will be integrated with social network tools, such as Facebook, to enable the creation of support groups for patients to share experiences, efforts, goals and achievements in handling their chronic condition. This social network interaction will be another great support and motivator for people to change their diet and exercise.