

Leveraging Online Data To Deliver Better Decision Support For Personalized Chronic Disease Management

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Abstract

There is a vast amount of healthcare information online, ranging from scholarly work product to user-generated content, which is under-utilized. This paper describes a system that combines these artifacts with patient data to provide personalized information in a order to help people better manage their chronic disease(s).

1. Introduction

Across the world, standard healthcare infrastructure is in need of improvement [1]. There are also a number of financial, legislative and social factors ushering in this change. Understanding healthcare information, finding expertise, acquiring social services and insurance issues are critical issues in the delivery of high quality healthcare. Health-e-Assistant is a first step in addressing these concerns.

2. System Overview

Health-e-Assistant (HeA) is a system that provides a comprehensive and user-friendly interface to targeted healthcare information that facilitates:

1. the discovery of health-related information e.g. financial, physical, and informative, and social services e.g. transportation programs, financial assistance programs, and in-house support services
2. the intelligent analysis and delivery of healthcare information based on personalized needs
3. the automated acquisition of the social services to help patients manage their medical conditions.

At the core of Health-e-Assistant is the goal of encouraging people to play an active role in maintaining good health. A principal tenet is information personalization (Figure 2), which is the concept of providing information that is relevant to the patient.

3. System Advantages

The HeA system is made of two components: a server and a client. The advantages of the current design are:

1. The system is built to scale for a large number of users and a large number of simultaneous transactions.
2. Secure communication between the HeA client and server
3. Architecture is extendible. That is, applications can be built upon it through the HeA Server Interface.
4. Ingest of data from both established healthcare sources and new Web 2.0 sources.
5. Personalization of collected healthcare information done through the use of the user's (secured) profile data.
6. Helps user to acquire social services available for their ailment.

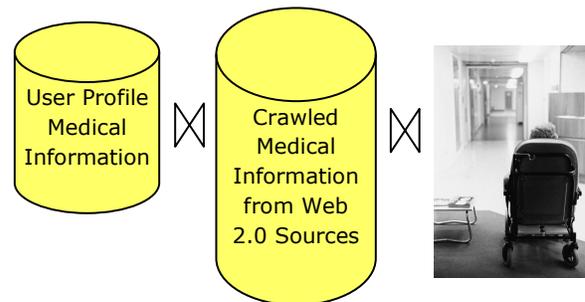


Figure 1: Personalization of Healthcare Data

3. Conclusion

We have leveraged our expertise in Web technologies, database systems, personalization and privacy & security to create a system that has shown, experimentally, promising results and impact on the future of chronic disease management.

4. Acknowledgements

We would like to thank Varun Bhagwan, Bill Cody, Bryan Hickerson, Tarun Thakur and Evimaria Terzi; without whom this would not be possible.

References

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