Personal Informatics in Practice: Improving Quality of Life Through Data

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Abstract

Personal informatics refers to a class of software and hardware systems that help individuals collect personal information to improve self-understanding. Improving self-understanding can foster self-insight and promote positive behaviors: healthy living, energy conservation, etc. The development of personal informatics applications poses new challenges for human-computer interaction and creates opportunities for applications in various domains related to quality of life, such as fitness, nutrition, wellness, mental health, and sustainability. This workshop will continue the conversations from the CHI 2010 and CHI 2011 workshops on personal informatics [6][7]. The focal themes for this workshop are: (1) practical lessons from previous research and development experiences that can guide interface design for systems that allow users to collect and reflect on personal data; (2) requirements for building robust personal informatics applications; and (3) design and development of infrastructures that make personal informatics applications easier to create and evaluate.

Keywords

Personal informatics, quantified self, reflection, awareness, behavior, life logging, visualizations

ACM Classification Keywords

H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

General Terms

Design, Experimentation, Human Factors

Web Page

More information about this workshop is available online at http://personalinformatics.org/chi2012/.

Introduction

Personal informatics systems are interactive applications that support users in understanding various aspects of their life, behaviors, habits, and thoughts. These systems help their users build self-understanding by providing a means to collect personal history, as well as tools for its review or analysis. Increased self-understanding has many benefits, such as fostering insight [4], increasing self-control [8], and promoting positive behaviors such as energy conservation [9].

We have organized workshops about personal informatics systems at CHI 2010 and CHI 2011 [6][7], which were successful in getting a diverse group of people from multiple disciplines to discuss the many challenges and opportunities in this growing field[1]. In these past workshops, we focused strongly on issues surrounding the design and development of personal informatics systems, behavioral theories that guide the

development of personal informatics systems, and the social implications of these systems.

We will continue and extend these previous discussions with several new topics. We will focus on the application of personal informatics to various domains related to quality of life: fitness, nutrition, wellness, mental health, and sustainability. We will discuss methods for conducting personal informatics studies, which are usually conducted *in situ* over a long period of time. We will also discuss tools and infrastructures to help develop robust personal informatics systems that address current user needs and help researchers conduct studies. We expect to have group discussions centered on three themes: (1) designing interfaces and devices for collecting and reflecting on data in different domains; (2) building robust domain-specific personal informatics applications; and (3) the development of infrastructures that can make personal informatics applications easier to create and evaluate.

Approach

Design and Development. We will continue the past years' discussion about the different issues in supporting self-tracking and self-reflection with personal informatics systems. To maintain continuity, we will use the stages of personal informatics systems [5] to organize the different issues. We encourage submissions about collecting new types of behavioral information, facilitating the collection of multiple types of behavioral information, making it easier to understand information about oneself, and helping users take action on their newfound knowledge.

Behavioral Theories and Social Implications. Behavioral theories can help guide the design of personal

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[1] Position papers from the CHI 2010 and CHI 2011 workshops are available at http://personalinformatics.org/chi2010/ and http://personalinformatics.org/chi2011/, respectively.

informatics systems. Several theories have been used to describe the information and feedback needs of people who are looking at their own information for behavior change [2][3]. What other existing theories can provide different perspectives on self-tracking for behavior change?

Many personal informatics systems have social components, allowing users to share their personal data with others. In addition, data from existing social media sites can be reappropriated to create novel personal informatics systems exemplified by Facebook Timeline, WhereDoYouGo (FourSquare), TwitterAnalyzer (Twitter), and LastHistory (Last.fm). How can shared review or analysis of personal data improve self-understanding? What are the privacy concerns with sharing of personal data and how do we address them? How do these reappropriations change how users view these systems and does it increase or decrease engagement?

Application Domains. This year's workshop will add discussions on the lessons learned so far from the past workshops, previous research, and experiences from projects and products. The goal is to discuss how to apply these lessons to various application domains. What lessons can we draw from existing research or industrial designs that can impact personal informatics in practice? What designs and methods are working in the wild? What are the major application domains that can be improved by personal informatics?

Workshop Goals and Themes
One goal of this workshop is to define opportunities for exploration of human-computer interaction in personal informatics. Discussing design, behavioral theories, and social implications will help participants direct the future of the development and research in this field.

Another goal is to share expertise between members of different disciplines to better tackle the many HCI challenges that personal informatics systems introduce. Researchers need to study how personal informatics can benefit individuals in their daily lives, as well as to develop technologies that will make personal informatics available in daily life.

Our final goal is to promote this burgeoning field to other researchers and practitioners. Design guidelines and infrastructures need to be created to lower the barrier to entry for leveraging personal informatics in other domains.

Topics of Interest
We invite contributions from various disciplines on topics including but not limited to:

- New and current personal informatics applications and systems on desktop, web-based and mobile platforms.
- Sensor and life-logging technologies that monitor various personal behavioral information.
- Effective feedback techniques that help users become more aware of their own behaviors, such as visualizations, virtual agents, and persuasive technologies.
- Effects of self-understanding and self-awareness on behaviors and daily life.
- Methods of conducting long-term studies to determine effects of personal informatics on user behavior in various domains.

- Studies of personal informatics systems in the wild (either research prototypes or commercial systems such as Fitbit or Zeo).

Participants & Expected Community Interest

The workshop invites technologists, behavioral scientists, designers, and artists working on topics related to personal informatics. In particular, we are interested in participants who are developing personal informatics applications on the desktop and online; who develop sensor technologies, life logging applications, visualizations, and effective feedback techniques; who have expertise in testing and evaluating self-understanding; who have studied personal informatics systems in one form or another. Personal informatics poses many challenges and opportunities for interface design, user research, and other aspects of HCI.

Additionally, the mainstream media has become interested in personal informatics with articles in The Wall Street Journal [1], Wired [10], and other national publications. These articles describe the current technologies people are building and using to learn about their own behaviors, but we do not know how effective these current tools are in helping people—in particular, helping people face impactful issues faced in daily life such as diet, fitness, and sustainability. This is an opportunity to start the discussion on research issues that will lead to better personal informatics systems in the future.

In conclusion, as the third consecutive personal informatics workshop at CHI, we aim not simply to extend past work but to look backwards at the past three years to share and discuss the successes and failures of previous projects and methods. Our goal is to continue to build and enrich the personal informatics community and to serve as a sort of collective feedback loop for the research in this growing area.

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