

Personal Information Interfaces

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As the ubiquitous computing vision of “computation everywhere” has become increasingly mainstream, people make use of electronic information across multiple form factors, in more places, as part of more activities, and in more social contexts than ever before. This is the crux of the information overload problem: with a vast increase in exposure to information, there is a corresponding increase in the amount of work that people need to invest to keep up with the demands of perceiving, sense-making, organizing, utilizing, and managing that information. Dr. Stephen Volda and his student researchers in the *Personal Information Interfaces (PII)* laboratory explore ways that the interfaces, interaction techniques, and context-aware infrastructure employed in the next generation of information systems might better respond to the critical, real-world challenges associated with information overload.

A new generation of sensor-enabled computing devices stands to magnify the information overload effect by adding *streams of data* about our environment, our working contexts, and traces of our activities—both online and in the real world—into the mix. A popular example is the growing number of fitness tracking devices that have appeared on the market in the last few years, for example, Fitbits, Nike+ Fuelbands, and the Jawbone Up (just to name a few). Proponents of the “*quantified self*” movement suggest one way to use the data streams provided by these devices: as *a means for self-reflection*. However, effective self-reflection requires that a vast amount of information—often highly personal in nature—be captured by our devices, and it introduces new work for end-users, such as finding patterns in the data and translating sensed trends into effective actions.

We are currently launching a study of commercial fitness trackers to understand when different representations of self-reflective data streams are effective in helping to facilitate behavior change...and when those representations contribute instead to a sense of information overload. We are also exploring similar questions related to other technologies that collect and present self-reflective data about daily life—time management tools, mood-tracking apps, and the like. In general, we aim to understand *how infrastructure and interface design can prevent people’s experiences of sensed data streams from contributing to information overload while still allowing us to capitalize on the positive behavior change and self-reflection potential of this information.*

