
Interrogating Biosensing in Everyday Life

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Abstract

This workshop seeks to expand our understanding and imaginations regarding the possible roles biosensors (sensors measuring humans) can—and should—play in everyday life. By applying a critical lens to issues of interpretation, representation, and experience around biosensing and biosensors, we aim to shape research agendas within DIS, and generate new recommendations for designers working with biosensors or their data.

Author Keywords

Biosensing; materiality; biometrics; quantified self

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous;

Introduction

Biosensing, by which we mean sensors measuring human physiological and behavioral data, is becoming pervasive throughout daily life: beyond wristwatches that measure heartrate and skin conductance [6], to clothing [15], furniture, mirrors [16], cars, personal robots, ingestibles [17], virtual reality headsets, as well as visual and wireless sensors that can collect bodily data at a distance [1].

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Biosensing in daily life brings new challenges and opportunities for the design of interactive systems, such as supporting social and emotional interpretations of biosensory data (e.g., [8,11,23]); implications for how people construct themselves and are constructed through data (e.g., [5,18]); and what privacy means in such contexts (e.g., [4,14]).

Biosensing presents designers, citizens, and artists with an emerging class of datasets and physical devices that possess a unique set of material characteristics [19]. As data, it can be amassed and analyzed at scale with computation. And yet this data intimately and viscerally involves our bodies, supporting small scale, personal and subjective interpretation as well. Biosensory data are used to draw inferences in a growing range of areas, such as health, mental and emotional states, or memories and thoughts. The often-presumed objectivity of sensory data lends it a potentially problematic potency in constructing users as data subjects [13,20].

Biosensing's unique social and technical characteristics provide opportunities, and challenges, for designers to support social and emotional interpretation, personal identity building through data, and privacy. This workshop seeks to engage researchers in exploring these themes in lights of the emerging ubiquity of biosensors in everyday life. We welcome participants whose work covers a variety of different topics, including but not limited to:

- Self-tracking practices
- Privacy and surveillance
- Critical and speculative design

- Infrastructure studies
- Affective systems
- Design for reflection

We welcome work from a variety of methodologies, such as design research, anthropology, STS, ethnographic studies, user studies, art practice, systems building, and critical or speculative design.

Workshop Theme: Biosensing in Daily Life

While many biosensing applications focus on improving health and fitness, our workshop seeks to explore biosensing in daily life through the themes of interpretation, representation, and experience.

Interpretation - Biosensory data affords certain types of interpretations (and representations and constructions), while possibly obfuscating others [10,12]. Understanding interpretation as a social and cultural process [3,8], we ask: How are interpretations of biosensory data constructed and contested among designers, researchers, and users? What interpretations become visible, and which remain invisible? How does interpretation relate to designed artifacts and design practices?

Representation - How are users, people, and bodies imagined and created as subjects through biosensing technologies? [7,9,11] Who is seen (and not seen) as a subject [25]? What agency do users and non-users have to contest these positionings?

Experience - Considering the social processes of interpretation and representation of biosensory data, how do people experience biosensing systems - or how

could they experience them? How does this relate to users' everyday individual and interpersonal practices? [2,21,22] How are broader infrastructures, policies, and social justice concerns implicated in biosensory experiences? [14,24]

The themes of interpretation, representation, and experience help explore a variety of challenges and opportunities that arise with biosensing in daily life. Rather than focusing on making inferences in a particular application domain using biosensing, this workshop aims to take a step back and look at these high level themes to investigate more social, cultural, and collaborative aspects of biosensing.

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