Jogging with Technology: Interaction Design Supporting Sport Activities

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Abstract

There has been a significant increase of interactive technologies to support sports activities. Examples are heart rate monitors for cyclists, jogging apps on mobile phones and GPS sports watches for extreme sports. Despite consumer popularity, there is little knowledge about how they should be designed in order to support the exertion activity. Based on CHI'13's success of conducting a special interest group outdoors, we propose jogging with technology to discuss sports-support interactive systems and investigate what future opportunities and challenges exist.

Author Keywords

Sports; exercise; exertion interface

ACM Classification Keywords

H.5.2. [Information Interfaces and Presentation]: User Interfaces.

Introduction

There has been a significant increase of interactive technologies on the market to support sports activities. For example, a customer entering a sports shop is now faced with a wide range of interactive technologies that aim to support many different sports activities such as

heart rate monitors and GPS watches. Sportspeople can also choose from a variety of apps available on mobile phones for activities such as jogging. Furthermore, game consoles merge the notion of play and sports by facilitating activities such as physical exercise in people's homes.

In contrast to initial approaches that favored professional athletes, recent systems target everyday sportspeople, fuelled by decreases in costs. For example, early systems in training camps were most often developed to improve an athlete's performance. Today, sensors and computational devices are much smaller and cheaper and allow for a richer interaction enabling designers to extent systems beyond purely aiming for performance. From our experiences, most commercially available systems do not focus on sole performance enhancement anymore. For example, the success of headcams such as GoPro might suggest to us that, although these cameras could be used to watch one's activity in order to enhance performance, they are mostly used to share the sports activity with loved ones at home and online, expanding the experience range. Therefore, these headcams enhance the sports experience beyond mere performance objectives.

The GoPro example suggests to us that these new kinds of sports technologies expand the interaction space, offering new opportunities for designers and sportspeople alike, but also introducing new challenges when it comes to support sports activities. An important question for example is how sportspeople can and should interact with these new technologies? Prior research has highlighted that considering bodily action when interacting with technology has its own challenges [1] but also offers advantages to the user

experience [2, 4-6, 8]. However, there is little knowledge in terms of a conceptual understanding on how to address this question.

In response, this special interest group (SIG) investigates the opportunities and challenges for the field. Our method of doing this is by jogging as a group, actively engaging with these technologies. We will encourage participants to bring any commercial and research projects that they have access to, and we will also bring our own systems. For example, we will bring our 3D printer project [3] that measures participants' heart beats in order to provide them with personal biodata-informed 3D-printed souvenirs after the run.

During CHI'13, we began such an investigation into generating knowledge about sports and HCI by assembling a group of 24 people interested in the topic (see Fig. 1). Considering the location of the CHI venue and time of the year (Paris in May), we decided to go jogging at a nearby park for an initial SIG exploring these themes. Feedback by participants on the idea of leaving the confines of the conference venue in order to get fresh air and some exercise was overwhelmingly positive. Participants applauded the opportunity to engage in physical activity after predominantly spending time sitting during CHI. It was also mentioned that the meet-up offered an opportunity to counter the CHI partying the night before. Furthermore, it was mentioned that the park environment afforded rich and deep social interactions that many could not have in the hectic CHI environment between sessions. Lastly, it was welcomed that talking about sports and CHI involves being physical active, matching the topic at hand. We have created a concept video based on the activities at CHI'13, where one of the organizers wore a

headcam as well as biosensors in order to demonstrate the feasibility of the idea [10].
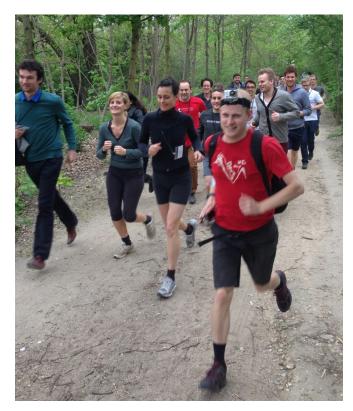

Figure 1. Jogging with technology at CHI.

Approach to conducting the SIG

We propose to go outside and be physically active while conducing the SIG. We chose this format based on our positive experience of CHI'13. This format also responds to the call for "creative approaches to conduct the SIG itself". By jogging, we hope to better engage with the challenges and opportunities when designing for exertion, in line with suggestions that one has to move when designing for movement [2, 7, 8]. Lastly, we believe that through exertion we can facilitate social interaction and associated rapport as suggested by projects that use sports activities to foster community building [9].

Target community

The target community for this SIG is researchers interested in interactions that involve the user moving and consequently exerting. As such, this SIG targets researchers interested in altered interaction abilities due to the special physical and cognitive circumstances. This SIG is also of interest to practitioners who are designing interactive hardware and software for sports activities. Furthermore, designers of digital games that support exercise activities such as the Kinect Nike+ system can also benefit from this SIG. In sum, this SIG brings people together from a wide range of fields: sports, research, games (which is a "spotlight" as this year's CHI) and interaction design.

Assumed attendee background

Attendees' assumed professional background has been described in the previous section on target community. We will now explain how we intend to accommodate different jogging abilities based on our personal experience of leading fitness activities with people of different fitness levels.

Our aim is to offer a jogging route that is short enough that all moderately fit participants can run around it at least once, with more ambitious participants running around it multiple times. This affords opportunities to interact with participants of different fitness levels

when catching up with each other. We can also offer a powerwalk option.

Schedule of discussion topics

We will advertise the SIG through the CHI-announcement list noting that participants will need to bring their sports gear. At CHI, we will meet in the conference center and introduce the jogging route as well as start any equipment. We will then begin jogging once we reach the jogging route (away from cars) and facilitate introductions between participants. Participants will run next to people with whom they are interested in talking more; this way the spatial character of running together will shape and be shaped by the interests the participants expressed. Participants are encouraged to share their experiences with any sports systems they bring along, discussing their effect on the jogging experience. We will conclude the jog with sports drinks and an informal discussion during the cool-down period. In particular, the heightened state of arousal resulting from exertion, which has been suggested to be conducive to social interaction [9], might be beneficial to fuel networking interactions.

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