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# SIG on Interactive Computing in Outdoor Recreation

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**Abstract**

Interactive computing has impacted how people experience outdoor recreation. Nevertheless, the role of interactive computing in outdoor recreation can be complicated. Some people engage in outdoor recreation precisely to avoid distractions associated with pervasive interactive computing. Others use interactive computing to create, enhance or share outdoor recreation experiences. In this SIG, participants will discuss research questions and foundational theories that might guide future work related to interactive computing in outdoor recreation. The discussion will range from engineering issues to research methods. Attendees will have opportunities to stay connected after the SIG.

**Author Keywords**

Outdoor recreation; nature; sports technologies; ubiquitous computing

**ACM Classification Keywords**

H.1.2 [User/Machine Systems]: Human factors; H.5.m [Information interfaces and presentation (e.g., HCI)]: Miscellaneous.

## Introduction

Many people benefit from participation in some kind of outdoor recreation. Outdoor recreation involves non-work activities done outside. This includes activities ranging from hiking to riding all-terrain vehicles (ATVs) and from watching birds to playing football. Participation in outdoor recreation may create many physical, mental, and emotional benefits.

Interactive computing is also beginning to find application in outdoor recreation. Applications of interactive computing have the potential to improve how people plan for, engage in, and share outdoor recreation experiences.

Existing research has explored interactive computing applications in outdoor sports in general [1] and investigated interactive computing in the context of hiking [5], climbing [3, 4], running [2], and cycling [6]. Technology can be not only used to track and share outdoor experiences but also to facilitate solitude by providing guidance on how to avoid other people [5].

The purpose of this SIG is to identify research questions and foundational theories related to understanding interactive computing in outdoor recreation. Topics of interest range from engineering problems to research methods as they apply in the context of interactive computing in outdoor recreation. The SIG will focus on identifying and discussing research questions unique to interactive computing in outdoor recreation.

One set of potential research questions involves the social impact of interactive computing in outdoor recreation. People pursue outdoor recreation for a variety of motivations. Adding interactive computing to



**Figure 1:** This SIG will consider the role of interactive computing in outdoor recreation. For example, does taking selfies distract from or encourage outdoor recreation? (Photo by instagram user docentjoyce)

outdoor recreation can cause conflict between people depending on their motivations.

Figure 1 shows people using a cell phone to take a selfie in an outdoor setting. Does taking a selfie distract from the outdoor recreational experience for the users and others? Or does taking and sharing a selfie motivate the users and others to get outside and create experiences they deem to be worth sharing? More fundamentally, how can HCI researchers and practitioners understand attitudes toward interactive computing in outdoor recreation?

Another set of research questions specific to interactive computing in outdoor recreation involves determining how to implement systems for outdoor use

by users engaged in some recreational pursuit. This involves managing environmental constraints such as limited access to power, weather conditions such as rain, snow, cold, heat, wind or bright sunlight. For example, using an interactive system while alpine skiing might involve cold winds, blowing snow, and high elevation. How should systems be engineered create a meaningful interactive experience in these conditions? And further, what does a meaningful interactive experience mean in such a situation where the user is already highly engaged in some other experience?

## **SIG Meeting Plan**

### *Before the SIG Meeting*

A SIG page will be created with a shareable URL containing a “Call for Participation”, invited speakers/panelists, and additional information, which would be online after acceptance notification. The call for participation will be circulated widely to potential interested communities ranging from HCI & Sports, Health and Wellbeing research, to Ubiquitous Computing (UbiComp) and HCI in general. In addition, the organizers will contact potential attendees from various countries, from both the academic and industrial domains, in particular from the HCI and UbiComp communities. We will encourage all potential participants to submit a brief introduction of current or planned projects related to interactive computing in outdoor recreation. The organizers will select certain projects to be presented at the SIG meeting.

### *At the Meeting*

We expect participation by scientists, designers and practitioners, and others working in several areas of HCI addressing the associated research questions, such as design and manufacturing of (wearable)

sensors, interaction techniques, evaluation methodologies, social impact, collaborative scenarios, and emerging application areas.

At the beginning of the meeting (after the introduction), the principal investigators (PIs) selected or invited by the organizers will briefly introduce their projects and visions in 5 minute slots.

Afterwards, a 15 to 20 minute panel discussion including these PIs will be held in which some of the questions collected before the meeting will be interactively discussed among the participants.

This will be followed by a low-fidelity prototyping activity. Attendees will break into groups and use provided materials to build low-fidelity prototypes. We hope that the prototyping activity will facilitate discussion between attendees.

Organizers will also provide outdoor recreation gear such as balls, packs, bicycles, skis, hiking boots and boat paddles for the prototyping activity. This will help to lend context to the prototyping activity, and may also help attendees to recall their experiences in outdoor recreation and lead to more detailed design discussions. This will also allow prototypes to be specifically mated with outdoor recreation gear, hopefully leading to a richer and more productive prototyping experience.

At the end of the meeting, the organizers will announce upcoming events for the SIG. Currently, the organizers are preparing a proposal for a UbiComp workshop. Finally, participants will receive flyers with information regarding the SIG web page, mailing list and upcoming related events such as conferences or other meetings.

### *After the Meeting*

Future meetings will be publicized and documented on the web page and on social media platforms. We plan to publish the slides of the presentations at the SIG web page. We will encourage attendees to connect on social media or over email.

### **Target Community**

The target community is practitioners and academics who are interested in the intersection of outdoor recreation and interactive computing. We define “outdoor recreation” broadly to include activities such as hiking, bird watching, ATV riding, cycling, outdoor team sports, wildlife photography, and any number of other pursuits undertaken outdoors and/or in nature.

### **Expected Attendee Background**

We expect attendees to have an interest in interactive computing in outdoor recreation and we expect a great deal of variation in attendees’ experience level with both research in interactive computing in outdoor recreation and in outdoor recreation itself. Some attendees will have little experience in outdoor recreation, while other participants will have significant experience in one or more kinds of outdoor recreation. Similarly, some attendees may have done significant research, design or development in interactive computing in outdoor recreation while other attendees may have no such experience.

### **Acknowledgements**

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