SportsHCI Meet-Up: Exploring the Role of AI in the Evolving World of SportsHCI

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Figure 1: Future of Human-Computer Interaction in Sports: an AI generated image by Google Gemini

Abstract

Sports Human-Computer Interaction (SportsHCI) is a growing field that is dedicated to investigating the coming together of human-computer interaction and sports. Through this meet-up, we aim to bring together the SportsHCI community and engage adjacent communities including User-centered AI, MobileHCI, CHIPlay, ISWC-Ubicomp, and Augmented Humans. Sports inherently involves mobile, playful, and ubiquitous technologies as well as human augmentation—making SportsHCI directly relevant to these subcommunities. By framing discussions around AI in the athlete experience and the role of multifaceted sports data, we create natural entry points for researchers across these domains. We invite participants to discuss their thoughts on these topics to foster collaboration among research groups.

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CCS Concepts

• **Human-centered computing → Human computer interaction (HCI)**; *HCI theory, concepts and models.*

Keywords

SportsHCI, Sports, Exertion, Exercise, E-sports

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1 Motivation

SportsHCI has emerged as a vibrant field at the intersection of HCI and sports. Prior SIGs [6, 7] and a recent Dagstuhl seminar produced a set of grand challenges for the SportsHCI field [2, 5]. Building on this momentum, our proposed meet-up focuses on the increasingly prominent role of Artificial Intelligence (AI) in SportsHCI. AI is increasingly embedded in sports technologies—from performance analytics and injury prevention to personalized coaching and immersive training. Consequently, there is a pressing need to reflect on whether these developments genuinely support athletes' diverse goals and lived experiences and evaluate the risks of over-reliance, over-automation, and exclusion of human expertise. Addressing these SportsHCI challenges requires collaboration with adjacent communities, such as User-centered AI, MobileHCI, ISWC-Ubicomp, and Augmented Humans. By convening adjacent communities, the session will explore meaningful, ethical, and situated AI integration, identify opportunities and tensions, and set an agenda for future collaborations to ensure SportsHCI remains both innovative and human-centered.

2 Proposal and Meet-Up Goals

In this 90-minute meet-up, we will focus on two key challenges in SportsHCI in translating research and design into real-world sport practice. The first key challenge revolves around **designing interactive technology to support the experiential side of sports in a real-world environment**. The second key challenge concerns **designing interactions to deal with enormous volumes of multifaceted sports data** [2]. We will explore how emerging AI technologies, such as large language models (LLMs), machine learning (ML), and embodied intelligence, can be leveraged to address these two key challenges. We propose discussing the following questions to be discussed:

(1) How can LLMs, ML, and embodied intelligence meaningfully support the enjoyment, personal growth, health benefits, and social connection dimensions of the athlete experience?
(2) How can LLMs, ML, and embodied intelligence be leveraged to understand big sports data, such as that generated by smartwatches, sports glasses, trackers, and countless phone applications, in a timely manner, while not overwhelming the user?

The audience will be split in groups and devote 35 minutes to each question to allow for indepth discussions. Each group will identify concrete challenges and promising next step research directions to foster future collaboration. After the 35 minutes, groups will share their outcomes with the whole audience and organizers will capture these and share them on the website.

2.1 Audience

This meet-up invites participation from researchers, practitioners, and experts from the SportsHCI community and adjacent areas such as User-centered AI, MobileHCI, CHIPlay, ISWC-Ubicomp, and Augmented Human. As sports inherently involve mobile, playful, and ubiquitous technologies as well as human augmentation, SportsHCI is naturally connected to these subcommunities. By framing discussions around AI in athlete experience and the use of multifaceted sports data, we offer clear entry points for cross-domain collaboration. Our goal is to foster an inclusive space for participants from diverse backgrounds and career stages, from junior to senior researchers, technologists, and designers.

2.2 Activities

The meet-up will begin with a brief movement-based introduction and overview of each grand challenge. Then, participants will engage in focused discussions, facilitated by organizers, lasting 35 minutes each. To keep the discussion lively and tacit, a set of sports images will be projected sequentially to inspire thoughts and reflection. We will foster physical engagement to reflect the SportsHCI theme by using physical sticky notes to capture ideas, use a ball as "talking stick", and conduct spatial voting (in which the participants move to a specific spot in the room to take a stance).

2.2.1 Agenda. The agenda consists of two parts and is set up to provide a setting for in-depth discussion of the topics posed above combined with movement breaks to energize.

- **Part 1: (40min)** After a short introduction (5min), attendees will be divided in groups of 8-10 researchers balancing backgrounds and seniority levels. Moderated by an organizer, each group will discuss a subset of the questions related to the grand challenges (35min).
- **Part 2: (35min)** After an energizing movement break (5min), each group will report back the results of the discussion (25min). Insights and conclusions will be captured by the organizers during the discussions and sharing round. Finally, conclusions and closure by organizers (5min).

2.3 Outcomes: Shared Research Agenda:

We will collectively produce concrete research agendas focused on the role of AI in athlete experience and complex sports data management. Additionally, this meet-up will unite the SportsHCI community and adjacent fields, fostering new research collaborations that will drive forward this emerging area. To facilitate continued communication and future collaboration beyond the session, we will utilise Discord as a shared online platform for attendees.

3 Organizers

Vincent van Rheden is a research fellow at the University of Salzburg. He dedicates his PhD to develop technology aimed to support runners with breathing techniques [3, 9, 10]. He organized three workshops on SportsHCI [8, 11, 12], and functioned as demo chair at SportsHCI'25 conference.

Michelle Adiwangsa is a PhD candidate at the Australian National University. Her research investigates how augmented reality head-mounted displays can facilitate exercise (and exergaming) experiences at home. She has co-organized the OzCHI conference and a workshop focusing on movement-based design [1].

Maria 'Mafe' Montoya is a PhD student in the Exertion Games Lab at Monash University in Melbourne, Australia. Her research experience covers the design of SportsHCI and WaterHCI systems as well as soma design practice. She has co-organised a Ubicomp'24 workshop on multimodal feedback in sports [11] and a DIS'25 workshop on water sports [4].

Ian Smith is a PhD candidate at the University of New Brunswick. His research focuses on designing video games to make the boring parts of sport training more fun. He has co-organized workshops in fields adjacent to SportsHCI.

Dr. Don Samitha Elvitigala is a Lecturer/Assistant Professor from the Department of Human Centred Computing of Monash University. His research focuses on developing novel on-body interfaces that can enhance human capabilities. He has co-organised workshops onSportsHCI [11, 12] and was the student design competition chair for SportsHCI'25.

Daniel Harrison is an Assistant Professor in the School of Design, Arts and Creative Industries at Northumbria University, UK. His research focuses on digital health, self-tracking, and inclusion, taking a critical approach to understanding how technologies shape everyday experiences of physical activity—particularly for underserved communities. He has co-organised CHI and UbiComp workshops and served as EDI Co-Chair for the inaugural SportsHCI conference.

Prof. Amon Rapp is an Associate Professor at the University of Turin, Italy, leading the Smart Personal Technology Lab. His research focuses on video games, self-tracking and behavior change technologies for sports and well-being, conversational agents, and human-centered AI. He is an associated editor for the International Journal of Human-Computer Studies and Human-Computer Interaction. He was the technical program chair of SportsHCI'25.

Prof. Alexander Meschtscherjakov is a full professor at the HCI division of Salzburg University. His research focus on new forms of user interface design, user experience with mobility systems, and persuasion to foster new forms of behaviour. He is SC co-chair of AutomotiveUI, was general co-chair for CHI PLAY'21, co-organized conferences such as AutomotiveUI'11 or Persuasive'15 and was co-organizer of more than 25 workshops (e.g., CHI'21).

Prof. Florian 'Floyd' Mueller is Professor of Future Interfaces at Monash University in Melbourne, Australia, directing the Exertion Games Lab. Floyd was general co-chair for CHI PLAY'18 and was selected to co-chair CHI'20 and CHI'24. Floyd has co-organized over 6 workshops and Dagstuhl seminars around SportsHCI.

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