

Towards New Possibilities of Bio-HCI: Exploring Future Scenarios of Bio-HCI Innovation

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Future Ecologies Group

Workshop Proposal for: ChCHI 2024 Workshop, November 22



Participants:

10 – 20 Participants

Workshop Language:

English/Chinese

Workshop Duration:

9:00 – 12:00 (with one coffee break with refreshments)

Workshop Description:

With the development of science and technology, the integration of biology and human-computer interaction (HCI) has become an emerging and promising research direction, leading to the development of the new research direction of Bio-HCI. Bio-HCI uses innovative biotechnology, biosensors and biomaterials to redefine the relationship between humans, organisms, and computers through bio-design and examines ways in which such interaction experiences can be supported and enhanced. This workshop aims to provide participants with an open-ended discursive space to understand the basic concepts, trends, and cutting-edge cases of Bio-HCI. At the same time, the workshop will guide participants to experiment with these concepts in a design exercise to generate new interaction models and to discuss the future application scenarios and possibilities of Bio-HCI in order to promote the innovative application of Bio-HCI in different fields.

Target Audience:

- Design students, interaction designers, artists and HCI researchers with an interest in Bio-HCI topics
- engineers and scientists with cross-disciplinary research and innovation interests
- Students with an interest in the Bio-HCI



(Image source: <https://www.helenesteiner.com/>)

Expected Outcomes:

1. Understand new research directions of human-computer interaction.
2. Understand the development trends, application methods and tools/technologies of Bio-HCI (sensors, IoT etc).
3. Enhance the design team's ability to collaborate and communicate across disciplines.
4. Inspire participants to think extensively about the future innovation and application scenarios of Bio-HCI.
5. Experimental design Bio-HCI design concepts.

Agenda

Information for Organizer (not to be published)

9:00 - 9:20 Introduction

- Introduction of the objectives and process of this workshop and provide participants with a background overview of Bio-HCI. Cover the definition of Bio-HCI, the discipline composition, and its relationship with HCI.

9:20 - 9:40 Related concepts

- Share the trends of Bio-HCI, including cutting-edge research and latest technologies supporting Bio-HCI.

9:40 - 10:00 Application Cases

- Presenting several Bio-HCI practice cases, demonstrating its application process in interactive cases.

10:00 - 10:15 Coffee Break**10:15 - 11:00 Small Group Exploration on Opportunities**

- Organize the participants to divide into several groups and use AI tools, mind maps and other tools to speculate on the application scenarios of Bio-HCI in the future.

11:00 - 11:40 Presentation of Results

- Each group selects a most creative or feasible concept for a short presentation and discussion.

11:40 - 12:00 Summarize and share

- Summarize the content of the workshop and review the key points and application scenarios proposed by each group. Participants share their takeaways from the workshop.
- Interested participants can explore future collaborative work.

Workshop participants bring their own equipment:

- Laptops
- mobile phones

Equipment Provided by Workshop Organizers:

- Sticky notes, whiteboard, draft paper, and pens
- Projector and screen for presentations
- AI tools (e.g., Midjourney)
- Coffee and refreshments

Christiane M. HERR, Professor of the School of Design at Southern University of Science and Technology, Master and PhD supervisor as well as responsible person for education and Director of the BEng Industrial Design program. With a background in architecture and engineering, Christiane leads the Future Ecologies Research



Group with a focus on the areas of cross-disciplinary ecological design, advanced façade technologies and digitally supported design. Christiane obtained a Dipl.-Ing. degree from the University of Kassel, an MArch and a Ph.D. degree from The University of Hong Kong and a Dr.-Ing. degree from the University of Kassel. Before joining SUSTech, she held positions at Xi'an Jiaotong-Liverpool University, Shenzhen University and National Cheng Kung University. Christiane was President of the Association for Computer-Aided Architectural Design Research in Asia (CAADRIA) for four years and is currently vice-chair of the Board



of the CAADFutures Foundation. She is a member of the editorial boards of the Journal of Architectural Computing (IJAC), the journal Architectural Intelligence and the journal Sustainable Horizons. Herr has authored over 100 peer reviewed academic publications and has recently co-edited the book “Design Cybernetics: Navigating the New”, published in the Springer Design Research Foundations Series.

何净植

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