The 2nd International Workshop on eXtended Reality for Industrial and Occupational Supports (XRIOS)

Overview

Over the past decades, eXtended Reality (XR) technologies have been applied to a wide range of industries and occupational areas for maintenance, quality control, training, education, remote collaboration, and so forth. The industries can benefit from XR by providing their employees with timely and efficient instructions. The users (e.g., occupational employees) can improve their work performance while reducing mental and physical workloads through effective XR systems (e.g., Metaverse and Digital Twin). However, as the workplace conditions become diverse, the XR technologies should be adaptive and innovative to meet the new industrial needs. Furthermore, as XR applications supporting industrial and occupational tasks include physical movements and activities, it is necessary to perform a variety of assessments from ergonomics and physiological perspectives.

This workshop—e**X**tended **R**eality for **I**ndustrial and **O**ccupational **S**upports (**XRIOS**)—aims to identify the current state of XR research and the gaps in the scope of human factors and ergonomics, mainly related to the industrial and occupational tasks, and discuss potential future research directions. XRIOS will build a community that bridges XR developers, human factors, and ergonomics researchers interested in industrial and occupational applications.

Organization

XRIOS (https://sites.google.com/view/xrios) will be organized as a **half-day online workshop** held either on March 25 or 26, 2023 at IEEE VR 2023. The tentative schedule (~3.5 hours) is as follows:

- Warm-up & Introduction (10 min)
- Invited Talk(s) (40 min) + Break (5–10 min)
- Paper Presentation Session (60–80 min) + Break (5–10 min)
- Discussion (30 min)—Breakout sessions depending on the number of attendees
- Summary & Closing (10 min)

Call for Papers

XRIOS 2023 seeks various types of paper submissions (**up to 4 pages**, excluding references), which include:

- **Position Papers** that identify and share insightful opinions and ideas.
- **Survey Papers** that capture the current states of research and present potential research gaps and future directions.
- **Project Papers** that give an overview of an ongoing/planning project by describing the approach and goals of the project.
- **Research Papers** that contribute state-of-the-art advances and provide results as evidence, which can include industrial/occupational XR applications and systems.

A range of topics, which embrace different disciplines and perspectives, are invited to contribute to XRIOS, including, but not restricted to:

- Industrial and occupational supports in Metaverse
- Industrial and occupational applications in XR

- Occupational safety and health training in XR
- XR for laborers in workplaces (e.g., construction, healthcare)
- XR in dynamic environments (e.g., transportation, emergency care support workers)
- XR for industrial job training
- XR for industrial hygiene
- Exoskeletons with XR for rehabilitation
- Human-robot interaction/collaboration with XR
- Physical and musculoskeletal assessment in XR
- Physiological and fatigue assessment in XR
- Physical and cognitive workload in XR
- Ergonomic considerations for wearable XR devices
- Working from home with XR in post COVID-19
- Remote collaboration and learning in XR
- Office/workplace ergonomics in XR
- Measures and human-performance modeling in XR
- Digital twin for industrial applications

The accepted papers of XRIOS 2023 will be published electronically through the IEEE Digital Library as a form of IEEE VR Abstract and Workshops proceedings. At least one author of each accepted paper is required to register, attend, and present at XRIOS 2023.

Submission Deadlines

All deadlines are 23:59:59 Anywhere on Earth (GMT/UTC-12:00)

- Submission deadline: **January 12,** 2023
- Notification of results: **January 19,** 2023
- Camera-ready deadline for inclusion in the IEEE Digital Library: **January 26,** 2023

Submission Guidelines

All papers must be original and not simultaneously submitted to another journal or conference. Submissions must be written in English and prepared in IEEE Computer Society VGTC (IEEE VR Conference) format. LaTeX and Word templates as well as a sample PDF can be found at: https://tc.computer.org/vgtc/publications/conference/. The papers must be submitted in PDF format electronically via PCS (https://new.precisionconference.com/). All submissions will be reviewed by the workshop organizers and other external reviewers (single-blind review).

Organizers

- Kangsoo Kim, kangsoo.kim@ucalgary.ca, University of Calgary (Primary Organizer)
- Heejin Jeong, heejin.jeong@asu.edu, Arizona State University (Co-Primary Organizer)
- Isaac Cho, isaac.cho@usu.edu, Utah State University (Co-Organizer)
- Hyungil Kim, hyungilkim@oakland.edu, Oakland University (Co-Organizer)
- Myounghoon Jeon, myounghoonjeon@vt.edu, Virginia Tech (Co-Organizer)

Contact: For any questions related to the workshop or submission process, please contact us via email at xrios.workshop@gmail.com.