



## CALL FOR SHORT PAPERS, LATE-BREAKING RESEARCH & INDUSTRY ABSTRACTS, AND ANNOUNCEMENT OF THE TELEPRESENCE COMPETITION

The First IEEE Conference on Telepresence (TELEPRESENCE 2024) will be held November 16-17, 2024, **in hybrid format**, with the in-person component located at Caltech, in Pasadena, California. The conference will provide a stimulating forum for researchers, educators, and practitioners to learn, share knowledge, report the most recent innovations and developments, and exchange ideas and advances in all aspects of telepresence systems and applications, telerobotics, human-machine interfaces, learning from humans, and autonomy. A Telepresence Competition will also take place on November 15, 2024, **with cash prizes**.

At this moment, we are calling for submissions of **short papers** (up to 4 pages) and **technical abstracts** (up to 2 pages) for late-breaking research or industrial research outcomes and/or demonstrations, as well as announcing the Telepresence Competition. Accepted short papers will appear on IEEE Xplore, while research/industry abstracts will appear in the conference proceedings, **but not** on IEEE Xplore. Paper/abstract submissions to theory and practice, including but not limited to, the following technical areas, are invited:

### Technological Infrastructure and Systems

Remote Collaboration  
Virtual Reality (VR) Integration  
Augmented Reality (AR) Applications  
Haptic Feedback Technology  
3D Tele-immersion  
Cross-Platform Compatibility  
Teleoperation Systems  
Real-Time Communication  
Low Latency Networking  
Spatial Audio Technology  
Wireless Control Systems  
Sensor Fusion for Robotics  
Robotic Actuation Techniques  
Internet of Things (IoT) Integration  
Cloud Computing for Telepresence  
5G and Advanced Networking  
Cybersecurity in Telepresence  
Edge Computing in Telepresence  
Digital Twins and Simulation  
Biometric Authentication  
Wearable Technology  
Machine Vision and Perception  
Advanced Image and Video Processing  
Environmental Sensing Technologies  
Virtual Meeting Spaces  
Quantum Computing Applications  
Collaborative Virtual Environments  
Scalability Solutions for Telepresence Systems  
Sustainable Design in Telepresence Technology

### Multi-Perception Integration of Data Sources

Approaches combining more than one perception source

### Human-Computer Interaction and User Experience

Gesture Recognition  
Brain-Computer Interfaces (BCI)  
Voice User Interfaces (VUI)  
Multi-Modal Interaction  
Ergonomic Design  
Assistive Technologies  
Augmented Reality Interfaces  
Virtual Environments Interaction  
User Experience (UX) in HCI  
User Interface (UI) Design  
Behavioral Modeling  
Ethnographic Data Analysis  
Cognitive Modeling  
Psychology of Human-Computer Interaction  
Social Presence in Virtual Environments  
Data Privacy and Ethics  
Accessibility in Telepresence  
Adaptive User Interfaces  
AI-driven Personalization  
Human-Centered Machine Learning  
Interactive Machine Learning

### Integrative Approaches

Autonomy and intelligent systems approaches in Human-Computer Interaction and User Experience

Interactive and responsive elements to Autonomy and Intelligent Systems

### Autonomy and Intelligent Systems

Autonomous Navigation  
Human-in-the-Loop Control  
Telepresence Robots  
Long-Distance Robotic Control  
Autonomous Decision Making  
Self-Learning Systems  
Robotics and Automation  
AI Ethics in Autonomy  
Intelligent Control Systems  
Swarm Intelligence  
Autonomous Agents and Multi-Agent Systems  
Self-Regulating Systems  
Predictive Analytics for Autonomy  
Empirical Studies in Human Learning  
Natural Language Processing (NLP) for Human Learning  
Human Feedback in AI  
Human-in-the-Loop Learning  
Haptic Interfaces for Telerobotics

### Timeline

Submission Deadline: July 26, 2024  
Decision Announcement: August 26, 2024  
Camera-Ready Submission: September 9, 2024  
Early-Bird Registration: September 9, 2024  
Late Registration: November 13, 2024

### Organizing Committee

General Chair: Paolo Fiorini  
Co-Chairs: Adrian Stoica, Ferat Sahin  
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### Telepresence Competition

Chair: Robert Mueller, NASA