

# CYBERWORLDS

3-5 October  
Sousse  
International Conference

# 2023



## CW 2023 SCOPE

Cyberworlds are information spaces and communities that immensely augment the way we interact, participate in business and receive information throughout the world. Cyberworlds seriously impact our lives and the evolution of the world economy by taking such forms as social networking services, 3D shared virtual communities, and massively multiplayer online role-playing games.

## TOPICS

CW 2023 will have the following tracks with topics not limited to :

### 1. Track VISUAL AND INTERACTIVE COMPUTING IN CYBERSPACE

#### 1.1. Visual Computing:

Extended reality (XR); Computer graphics; Computer animation; Visualization; Image processing; Computer vision, Deep learning in visual computing, etc.

#### 1.2. Data Science for Immersive Communication:

Immersive visual analytics; Machine and deep learning in visual communication; Collaborative visual analysis, etc.

#### 1.3. Applications:

Digital humans; Education in cyberspace; Shared art and cultural heritage; Health care in cyberspace; Online games and living in shared virtual worlds; Shared digital fabrication, etc.

#### 1.4. Multimodal Interaction and Human Factors:

Man-machine interaction (haptics, olfaction, sonification); Human dynamics; Communication; Collaboration; Entertainment; Digital assistants; Enhanced living; Human augmentation, etc.

### 2. Track COGNITIVE HUMAN-MACHINE INTERACTION

#### 2.1. Brain-Computer Interfaces (BCI) in Extended Reality (XR):

BCI applications; EEG-based neuroimaging; Mobile and adaptive BCIs; Neurofeedback systems and games; Neurorehabilitation and neuroplasticity; Machine-assisted cognitive enhancement, etc.

#### 2.2. Human Factors in Cyberspace:

Affective computing; Emotion artificial intelligence; Human factors in transportation and industry; Biosignals; Internet of bodies; Machine and deep learning for biosignal-based algorithms; Neuroergonomics; Cognitive multimodal interfaces; Human factors in XR; Cognitive human-robot interaction, etc.

### 3. Track CYBERSECURITY

#### 3.1. Cybercrime Prevention:

Identity and trust management; Content protection and digital rights management; Information hiding and anonymity; Privacy protocols; Security protocols; Malware detection; Attack detection, etc.

#### 3.2. Biometrics in Cyberspaces:

Behavioral biometrics; Biometric template protection; Emerging biometrics; Multi-biometrics; Presentation attack detection, etc.

#### 3.3. Internet of Things (IoT):

Security of embedded systems; Security protocols; Security in V2X and smart cities; Mobile networks security, IoT & big data, etc.

#### 3.4. Analysis of Digital Traces in Cyberspaces:

Forensics (computer, mobile devices, network, social media); Altered content detection (multimedia, deep fake); Digital data analysis (social media, file carving), etc.

## SUBMISSION CATEGORIES

Full paper (8 pages)

Short paper (4 pages)

Poster paper (2 pages)

## CONFERENCE PROCEEDINGS

with all accepted papers will be published by Conference Publishing Services as well as submitted to the IEEE Xplore Digital Library, IEEE Computer Society Digital Library, and reference databases of all major referencing indices including EI Compendex, Scopus, and SCI. SPECIAL JOURNAL ISSUES will consider for publications extended versions of the best accepted FULL papers.

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## ORGANIZATION COMMITTEE

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Najoua Essoukri Ben Amara  
Sousse University, Tunisia

Christophe Rosenberger  
Normandie University, France

### Program Chairs :

Alexei Sourin  
Nanyang Technological University, Singapore

Mohamed Ali Mahjoub  
Sousse University, Tunisia

## Important Dates

● Papers(Full/Short) Submission :  
**April 21, 2023**

● Papers (Full/Short) Notification :  
**May 29, 2023**

● Poster papers submission :  
**June 12, 2023**

● Poster papers notification :  
**June 26, 2023**

● Camera-ready submission :  
**July 14, 2023**

● Author registration :  
**July 14, 2023**

## CONTACT

General Co-Chairs: Najoua Essourki Ben Amara, Christophe Rosenberger

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Conference web page:

<https://cw2023.ieee.tn>

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