Call for Papers

The 29th International Conference on 3D Web Technology

25-27 September, 2024 Guimarães, Portugal - In-person and online

The 29th International ACM Conference on 3D Web Technology (Web3D 2024) is a major annual event for the 3D Web community. Sponsored by ACM SIGGRAPH, in cooperation with Web3D Consortium and supported by Eurographics.

This year's conference will be hosted by the **CCG/ZGDV Institute in Guimarães,** on the Azurém Campus of the University of Minho, a research institute with a focus on applied research, in the fields of information and communication technologies. The purpose of the Conference is to study and share the principles of the latest advancements in interactive 3D technologies, including the Metaverse. The conference will bring together experts from around the world to discuss the latest research, development, and practices related to these technologies.

This year's conference theme is **"The Metaverse Workplace"** an integration of virtual reality, augmented reality, and other immersive technologies into the traditional workplace, creating a digital environment to collaborate, communicate, and work together. As these technologies continue to advance, providing new ways for people to connect and collaborate remotely becomes crucial.

The Web3D community has a rich history of developing technologies that enable the creation and sharing of 3D worlds. Bringing together a diverse group of individuals to share innovative and influential thoughts on how the metaverse can revolutionize the future of communications. This includes topics such as 3D applications and services accessible through a wide range of devices, from simple mobile phones to more complex systems

such as AR/VR headsets, and heavily populated virtual worlds, especially those connected through high-speed, low-latency networks. Don't miss this opportunity to share your work, network with the experts and learn about new interactive 3D technologies.

Presented works will include a wide range of fields including, but not limited to, education, healthcare, e-commerce, informatics, cultural heritage and tourism, entertainment, mass media, military, construction, and emergent industrial 3D applications. The conference welcomes submissions from all relevant domains, as the goal is to create a rich tapestry of ideas on the future of environments in the metaverse.

Topics and areas of interest:

Use the following list of the topic areas as a reference rather than a limitation. We welcome all topics related to Web/mobile 3D content creation, immersive realities, 3D compression, publishing technology, tools, and related studies.

- VR/AR/MR/XR: virtual, augmented, mixed, cross and extended realities
- Novel interactive 3D web applications in all areas and sectors such as entertainment, education, training, cultural heritage and tourism, digital twins, medicine, military, smart-manufacturing / industry 4.0/5.0, information & data visualization, science, geographic information systems, digital globes, subsurface exploration and mining, integrated marine data management and visualization, smart city, building information modeling, and architecture.
- HTML5 3D, WebGL, WebGPU, glTF, MPEG and other languages and formats that support the 3D Web
- Semantic Web for 3D objects and scenes
- X3D application examples
- Novel APIs, toolkits, and frameworks for 3D web and associated application domains
- 3D content creation and modeling, 3D content scanning, reconstruction, compression, printing, visualization
- Artificial Intelligence (AI) technologies for 3D processing and its various use cases
- Algorithms for shape modeling, optimization, analysis, and processing
- 3D technologies for Digital humans
- 3D technologies for Medical and Health Data
- Digital Twins on the Web: modeling, cinematics, photorealism, simulation, etc.
- User-centered applications: usability, ergonomics, speed and responsiveness, customization of the virtual experience
- Visual analytics to enhance understability of large data in virtual environments
- Cloud-based rendering, services, interoperability for large-scale models, animations, virtual worlds and metaverses

- End to end systems for streaming, compression, and transmission of 3D content
- Motion capture for composition and streaming of behaviors and expressions
- Multi-modal 3D interaction paradigms, including spatial UI, gesture and voice
- Diffusion and adoption of 3D Web technologies, comparative studies, historical perspectives, www integration
- Mobile 3D applications and usability studies, including navigation performance and immersion Impact.
- Metaverse in education, entertainment, digital legacy and its impact on media and tourism.
- Metaverse for training and simulation in various industries.
- The impact of the Metaverse on speech, communication, interaction, and physical spaces.
- Computer vision and AI applications for the Metaverse.

The accepted papers and poster summaries will be published in the Web3D 2024 ACM Conference Proceedings, available in the ACM Digital Library. Works selected for the Best Paper awards will be invited to submit extended versions to the Computers & Graphics journal.

Submission Guidelines

All papers must be original, **anonymized**, and not simultaneously submitted to another journal or conference. Instructions for authors are available here: https://www.siggraph.org/learn/instructions-authors/.

Note: **Full, short paper and poster, tutorial and workshop submission are accepted via EasyChair.** Questions about the program and conference topics can be sent to program2024@web3d.org.

The following paper categories are welcome:

- **Full or short papers** presenting original work in 3D Web research and applications may be submitted in long or short form (up to 9 or 4 pages, EXCLUSIVE of the page(s) devoted to bibliographic references and short appendices). Do include a full citation list. Submissions will be peer-reviewed.
- **Posters** present results of ongoing or recently completed work in 3D web research and application. The poster format offers the opportunity to interactively present and discuss interesting results to the Web3D community. Posters should be submitted in the form of abstracts (2 pages). Posters must be formatted using the document templates for conferences. Upon acceptance, the final revised poster is

required in paper and electronic format. Printing and delivery of the poster is the author's responsibility.

- **Tutorials** are an opportunity to present introductory and advanced applications of 3D Web technologies to students and to experienced practitioners. Tutorial subjects can include practices for authoring interactive 3D scenes and using 3D graphics in diverse application areas. Especially welcome are tutorials in the use of open-source software and Web applications which can be presented in hands-on sessions at the conference. Submissions should include names, affiliations, and contact information, title of the tutorial, and a short summary including: the topic of interest, subjects covered, learning objectives, intended audience, prerequisites, and level of difficulty.

- **Workshops** provide a forum for researchers and practitioners from both the Web and 3D multimedia communities to discuss and exchange positions on current and emergent 3D Web topics. Workshops may take the form of presentation sessions moderated by workshop organizers or open discussions of new knowledge on a specific topic of interest. Each session will last 90 minutes with presentations and discussions. Submissions should include names, affiliations, and contact information, title of the workshop, and a short summary including: the topic of the emergent technology and its use cases and challenges.

- **Demonstrations** enable artists, content designers, and developers to share their innovative 3D work at the conference. Artwork and applications developed for various platforms, including the Web, desktop, mobile, and VR/AR systems, are welcome. Submission should include names, affiliations, and contact information, title of the demonstration, and a short summary including: technology and tools used, use case and market readiness.

- **Industrial Use Cases** enable practitioners to demonstrate how 3D Web technologies may be used in industrial applications. A special track during Web3D 2024 will be devoted to industrial use cases to share best practices, and requirements of using 3D in various application domains. Each presentation will last 20 minutes with 5-10 minutes for discussions. Submission should include names, affiliations, and contact information, title of the presentation, and a short summary including: Application domain and industry use case.

- **Standards Sessions** provide a meeting for researchers and practitioners from both the Web and 3D multimedia communities to discuss and exchange standardization issues on current and emergent 3D Web topics. Submission should include names, affiliations, and contact information, title of the presentation, and a short summary including: 3D emergent Standardization topic and status.

Accepted proposers of Tutorials, Workshops, Demonstrations and Industrial use cases will be asked to provide a biography paragraph for each presenter, a representative image, and

publishable course notes suitable for use on the conference proceedings, web site and promotional materials.

- **Submission:** https://easychair.org/conferences/?conf=web3d2024

Questions about the CFP, program and conference should be emailed to program2024@web3d.org.

Additional information on the conference is available at: https://web3d.siggraph.org.

Important dates:

- Paper Submission: ***May 20th, 2024***
- Notification of acceptance: **July 1st, 2024**
- Final paper version: **July 15th, 2024**
- Competition Submission: **September 8, 2024**
- Conference dates: **September 25th to 27th, 2024**