2025 CALL FOR PAPERS

SPIE.AR|VR|MR

Colocated with **SPIE Photonics West**

THE PREMIER EVENT FOR XR OPTICAL HARDWARE DESIGN

27–29 January 2025
The Moscone Center
San Francisco, California, USA

Share your research. Then, join your community in January for a packed week of conferences, posters, special events, and exhibitions.

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Submit abstracts by
17 July 2024

Join us in San Francisco for SPIE AR|VR|MR 2025

Prepare to experience the energy of SPIE AR|VR|MR. The focus on hardware and enabled content, combined with visionary industry perspectives from technology leaders working in the largest XR companies, startups, and suppliers, makes this an event to include in your calendar every year.

Conference sessions: 27 January 2025
Main Stage sessions: 28–29 January 2025
Exhibition: 28–29 January 2025
Courses: 27–30 January 2025

CONFERENCE AVR01

Optical Architectures for Displays and Sensing in Augmented, Virtual, and Mixed Reality (AR, VR, MR) VI

SPIE AR | VR | MR is the most important conference on optical architectures (optics, displays, sensors) for the next generation of smart glasses and head-mounted displays. We look forward to seeing your research on optical systems, subsystems, and/or the technological building blocks which will enhance virtual reality (VR), augmented reality (AR), and mixed reality (MR) experiences. We invite researchers and engineers from academia and industry to present and discuss recent developments in this rapidly advancing field.

Papers will be accepted in these areas:

- 3D display methods, technologies, and architectures
- 3D computer vision and reconstruction
- combiner optics and related architectures
- light-field rendering
- display engines, light sources, devices and building blocks, including laser sources, MEMS mirrors, micro-LED displays, LCoS, and packaging solutions
- novel imaging systems for hand, head, gesture, depth, eye, gaze, pupil, and vergence tracking
- novel optical sensors required for AR, VR, MR devices
- optical design, modeling, and optimization tools for AR/VR/MR architectures
- optical architectures for occlusion in AR/MR displays (such as active, regional and zonal dimming for environment accommodation) Si backplanes, architectures and driving schemes for display optimization
- metrology for VR/AR/MR systems
- optical materials and component fabrication for AR/VR/MR displays
- impact of optical architectures on the human visual perception and user experiences in VR/AR/MR displays.

Student Optical Design Challenge

The SPIE AR|VR|MR Student Optical Design Challenge encourages and acknowledgs excellence in oral and poster student presentations. The competition bridges the gap between traditional academic optics and industry expectations for today's immersive display products.

The main element of the challenge is the 3-minute "pitch" in which the participants present their design with an explanation of how it best overcomes the selected challenge. A jury comprised of industry leaders, technical experts from sponsoring organizations, and leading academic figures in AR, VR, and MR adjudicate the challenge presentations. See online for eligibility and how to apply.

Thanks to generous sponsorship, the top three participants receive monetary prizes awarded on the AR|VR|MR Main Stage.

EXHIBITION: See what's new in industry

Meet with the biggest names in consumer electronics and up-and-coming XR companies. Whether you want to check out the latest in AR-VR-MR hardware and systems, talk about the next research developments, or connect with colleagues.

Submit your abstract today:
Abstract due date: **17 July 2024**

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www.spie.org/avr