Time	Session	Presenter Name	Company	Presentation Title	Abstract	Biography	Photo
8:30	Registration						
09:30	Keynote Presentation	**Bernard Kress**	Google Director, XR Engineering	**Display Engines for Optimal Display System Architectures in All-day Use Smart Glasses**	Not all display engines are born equal when it comes to smart glasses. While LBS, DLP and LCoS display engines have proven to be the workhorses for the burgeoning AR headsets and smart glass industry, micro-LED panels and high brightness micro-OLED display systems are promising alternatives to reduce weight, size, power and increase brightness. We will see how the overall display system architectures (including the optical combiner and the overall see-through stack) dictate the choice of the optimal display panel technology. All-day use smart glasses remain first and foremost high quality eyewear products and size and weight are their main requirements: fashion and vision correction will always come first to the added digital functionality (this is very different for AR headsets). Audio-only was a strong smart glass introduction feature in previous years; display is poised to come in second throughout the next years, only if the added size, weight and power are compatible with traditional eyewear requirements. Immersive AR display headsets, both as VST (Video See-through) or OST (Optical See-Through) are very different products targeting different market segments and use cases.	Bernard has been involved in Optics and Photonics for the past 25 years as an associate professor, researcher, engineering director, starting in academia before moving to entrepreneurship and start-ups and eventually to large multinational corporations. He worked on product developments in the fields of optical computing, optical telecom, optical data storage, optical anti-counterfeiting, industrial optical sensors and more recently in immersive displays for augmented and mixed reality systems. Bernard published several books, is listed as principal inventor on more than 100 patents, and wrote a few hundred papers on these topics. He was the 2023 President of the International Society for Optics and Photonics (SPIE). He also chairs various SPIE conferences including the SPIE AR/VR/MR co-located with Photonics West and the SPIE Digital Optical Technologies co-located with Laser Munich. He is a short course instructor on micro-optics and AR/VR displays and hosts the monthly online SPIE AR|VR|MR fireside chats. Bernard held various positions at Google [X] Labs since 2010 (on Google Glass), Microsoft since 2015 (on HoloLens) and is since 2021 the Director for XR engineering at Google in Mountain View, CA.	
10:15	Morning Presentation #2	**Barry Silverstein**	Meta Senior Director Optics and Display Research Meta Reality Labs	**Technical Challenges of Wide Field of View AR**	Augmented reality (AR) glasses are on the cusp of becoming a mainstream consumer product, driven by smart glass use cases such as image visualization and AI-assisted information. While current AR glasses have limitations in terms of Field of View due to social acceptability and comfortable wearability, this presents an exciting challenge for us to overcome. By developing two key technologies - an imaging engine with high efficiency and an optical combiner with high quality imaging capabilities - we can unlock the full potential of AR glasses and enable users to experience even more immersive and interactive content overlaid onto the real world. This presentation will discuss the value and challenges of achieving Wide Field of View AR.	Barry Silverstein is a Senior Director of Optics and Display Research at Meta's Reality Labs, leading the charge in developing cutting-edge displays for VR and AR. With a focus on creating the world's smallest and most efficient visual imaging systems, collaborates to push the boundaries of what's possible. Before joining Meta, Barry was Senior Research Director at IMAX, where he received an Academy Award for developing and commercializing IMAX with Laser technology, bringing the iconic IMAX experience to the world's largest screens. With 28 years of experience at Kodak's research laboratory, Barry is a seasoned expert in laser projection, imaging/printing, space imaging, and optical recording. A graduate of the Institute of Optics at the University of Rochester, Barry works to change the world through Optics and Imaging.	
11:00	Morning Presentation #3	**Ed Tang**	Avegant CEO	**Advancing LCoS Displays for Augmented Reality**	Recent advancements of LCoS displays and architectures have made it the primary choice for Augmented Reality (AR) glasses. New optical imaging and illumination architectures have miniaturized the volume of these display engines while providing high image quality and power efficiency. Additional new control methods of LCoS engines have further extended the operating dynamic range and system power efficiency in AR glasses use cases. Next generation illumination architectures will bring further efficiency gains and contrast improvements to enable larger field-of-view AR devices in the future. Ed will discuss Avegant's key technologies in these areas.	Ed Tang is the CEO and founder of Avegant, a next-generation augmented reality display company. Avegant is developing next generation light engines that enable true consumer augmented reality products and experiences. From tiny light engines that enable true-glasses like form factors, to foveated displays that are optimized for human vision, Avegant has developed and manufactured award-winning products and technologies continually push the boundaries of near-eye displays. Born in Texas and raised in Taipei, Ed received his degree in Electrical Engineering from the University of Michigan, specializing in micro-electrical mechanical systems (MEMS), and joining the faculty full time researching and developing cutting-edge micro & nanofabrication technologies. Among a host of other entrepreneurial ventures, Ed was previously developing technologies for the MEMS biotechnology industry in areas of autonomous surgical robots, implantable neuromodulators, and microfluidic drug devices.	
11:45	Morning Presentation #4	**Andrew Sculley**	eMagin/SDC CEO, eMagin Corporation A Samsung Display Company	**OLEDoS Display Technology for AR/VR in Multiple Markets**		Andrew G. Sculley, has served as the eMagin's Chief Executive Officer since June 2008 and served on the company board since 2009. From 2004 to 2008 Mr. Sculley served as the General Manager of Kodak's OLED Systems Business Unit and Vice President of Kodak's Display Business, where he forged a number of alliances with flat panel display manufacturers. From 2001 to 2004, he was the CFO of Kodak's Display Business. From 2003 to 2006, he also served on the Board of Directors of SK Display, a joint venture between Sanyo and Kodak to manufacture active matrix OLED displays. From 1996 to 2001 Mr. Sculley served on as the Manager of Operations, CFO and member of the Board of Directors of Kodak Japan Ltd. Previously, he held positions in strategic planning and finance in Eastman Kodak Company. Mr. Sculley holds an MBA from Carnegie-Mellon University, an MS in physics from Cornell University and a B.S. in physics from Stevens Institute of Technology. He attended Harvard University's International Senior Management Program while an executive at Kodak.	

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12:30	Lunch and Exhibits						
13:30	Afternoon Presentation #1	**Naamah Argaman**	Meta AR Product Tech Lead and Display System Architect Meta Reality Labs	**Enhancing Display Experiences in AR with Eye and Hand Tracking**	AI assistants are integrated into various aspects of our daily lives, including our phones, laptops, and even into Ray-Ban Meta smart glasses for an on-the-go experience. We use text- or voice-based two-way communication to provide context and obtain information about everything around us, from the latest sports updates to random fact-checking. The introduction of display-based AR glasses offers new opportunities for enhanced communication, but it is currently one-sided - from the device to the user. This talk will explore how the use of eye and hand tracking can enhance the user's visual experience, what system designers can learn about the user and their intentions, and how the interaction between human and device can be improved using these sensors.	Naamah Argaman is an AR Product Tech Lead and Display System Architect at Meta Reality Labs, working on Meta's future AR products across various technologies and systems. Before joining Meta, she worked on uLEDs for AR applications at Mojo Vision and on diffractive waveguides and optical components for AR at Applied Materials Photonics Platforms organization. Naamah started working on AR based systems in the defense industry and she's the author of multiple patents on displays and optics. Naamah holds an MBA from Stanford University, along with a M.Sc and B.Sc in Electrical Engineering from Tel Aviv University and Technion, respectively.	
14:15	Afternoon Presentation #2	**Reza Chaji**	VueReal CEO & Cofounder	**VueReal ColourFusion™ MicroDisplay Technology**	In this talk, we will explore VueReal's innovative color fusion technology, which combines microLED low-resolution displays with LCOS high-resolution systems. This hybrid approach leverages the strengths of both technologies, offering unmatched brightness, power efficiency, and display clarity. Attendees will discover how this synergy paves the way for the next generation of display solutions in various applications.	Dr. Reza Chaji is the CEO and co-founder of VueReal Inc., a Waterloo (ON, Canada) based company focused on revolutionary technologies for enhancing electronic systems (displays, sensors, AI, Autonomy, medical, health, automotive, etc.) by integrating millions of micro-optoelectronic devices into system substrates scalably, affordably, and rapidly. He has extensive experience in the development and commercialization of advanced technologies. His work for enhancing OLED TVs' yield, quality, and reliability is adopted in today's OLED TVs. He received his Ph.D. degree (2008) in Electrical Engineering at the University of Waterloo, Waterloo, Canada, where he worked on designing and implementing large-area electronic systems for AMOLED displays, biomedical imagers, and bio-array sensors. He has over 70 published papers and one book in the field of display and sensor, over 200 filed/granted patent applications, and has received several prestigious scholarships and awards, including the EY Young Alumni Achievement Medal, Faculty of Engineering, University of Waterloo, 2012; CMC Douglas R. Colton Medal for Research Excellence 2009; and Strategic Microelectronics Council of ITAC Industrial Collaboration Award 2007. He was a finalist for the 2023-Entrepreneur of the Year award by EY. Under his leadership, VueReal Inc. was awarded the 2023- Top 50 Companies to Watch by Deloitte Canada's Technology Fast 50 program.	
15:00	Afternoon Presentation #3	**Tongtong Zhu**	Porotech CEO & Founder	**The Road to Commercialization and Mass Production of MicroLEDs**	Porotech, as a world-leading designer and manufacturer of MicroLEDs, has not only successfully developed several world-unique InGaN red-light and single-chip full-color micro-displays, paving the way for MicroLED applications but also actively realized the true commercialization and mass production of MicroLEDs. By establishing the world's first semiconductor MicroLED ecosystem with partners, Porotech has successfully bonded 0.12-inch micro-displays on 8-inch GaN on silicon wafers, completely rewriting the rules of the next-generation lighting technology. In the future, Porotech will steadily achieve the commercial production of AR products, including AR glasses, micro-projectors, micro-display panels, and various wearable devices. This talk will discuss how Porotech is truly pushing MicroLED towards commercial mass production and the significant impact this technology will have on future smart living.	Tongtong serves as CEO & Founder and leads technology development and business operations through his vision to champion MicroLED innovations to the global market adoption. Tongtong has a PhD in Materials Science from Cambridge University, a diverse background of physics, electronics, engineering and materials science, 15+ years' experience in the field of III-nitride semiconductor materials and devices, and has developed numerous new materials and structure production processes whilst progressing the general community understanding of the science of materials growth.	
15:45	Afternoon Presentation #4	**Gordon Wetzstein**	Stanford University Associate Professor Electrical Engineering Department	**Holographic AR Displays with Metasurface Waveguides**	Emerging spatial computing systems seamlessly superimpose digital information on the physical environment observed by a user, enabling transformative experiences across various domains, such as entertainment, education, communication and training. However, the widespread adoption of augmented-reality (AR) displays has been limited due to the bulky projection optics of their light engines and their inability to accurately portray three-dimensional (3D) depth cues for virtual content, among other factors. We will discuss a holographic AR system that overcomes these challenges using a unique combination of inverse-designed full-color metasurface gratings, a compact dispersion-compensating waveguide geometry, and artificial-intelligence-driven holography algorithms. These elements are co-designed to eliminate the need for bulky collimation optics between the spatial light modulator and the waveguide and to present vibrant, full-color, 3D AR content in a compact device form factor. To deliver unprecedented visual quality with our prototype, we developed an innovative image formation model that combines a physically accurate waveguide model with learned components that are automatically calibrated using camera feedback. Our unique co-design of a nanophotonic metasurface waveguide and artificial-intelligence-driven holographic algorithms represents a significant advancement in creating visually compelling 3D AR experiences in a compact wearable device.	Gordon Wetzstein is an Associate Professor of Electrical Engineering and, by courtesy, of Computer Science at Stanford University. He is the leader of the Stanford Computational Imaging Lab and a faculty co-director of the Stanford Center for Image Systems Engineering. At the intersection of computer graphics and vision, artificial intelligence, computational optics, and applied vision science, Prof. Wetzstein's research has a wide range of applications in next-generation imaging, wearable computing, and neural rendering systems. Prof. Wetzstein is a Fellow of Optica and the recipient of numerous awards, including an IEEE VGTC Virtual Reality Technical Achievement Award, an NSF CAREER Award, an Alfred P. Sloan Fellowship, an ACM SIGGRAPH Significant New Researcher Award, a Presidential Early Career Award for Scientists and Engineers (PECASE), an SPIE Early Career Achievement Award, an Electronic Imaging Scientist of the Year Award, an Alain Fournier Ph.D. Dissertation Award as well as many Best Paper and Demo Awards.	
16:30 - 18:00	Networking / Exhibits / Pizza and Drinks						