Curriculum Vitae

Woongseob Han

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Education

- **Ph.D student**: Department of Electrical and Computer Engineering, Seoul National University, Seoul, Korea, 2024 to present
- **Master of Science**: Department of Electrical and Computer Engineering, Inha University, Incheon, Korea, 2024.
  - Study on field of view, depth expression and visibility enhancements in optical see-through near-eye displays
  - Co-advised by Prof. Seung-Gol Lee and Prof. Jae-Hyeung Park
- **Bachelor of Science**: Department of Information and Communication Engineering, Inha University, Incheon, Korea, Feb. 2022

Research Interests

- AR/VR Near-Eye Displays
- Advanced Three-Dimensional displays based on light field and holography
- Occlusion optics

Honors and Awards

- **SAMIL Scholarship:** Full-ride scholarship, 2024
- **Paper award:** Holographic augmented reality display with hard-edge occlusion using amplitude-modulation spatial light modulators, OSK, Optics and Photonics Congress, 2024
- **Best Poster Paper Award**: the 23rd International Meeting on Information Display (IMID2023), Busan, Korea, Aug. 2023. (Paper title: Varifocal-Occlusion Supported Near-eye Display Using Stack of Geometric Phase Lenses and Electrically Switchable Half Wave Plate).
- **BK21 우수연구상**, Feb.2023.

- **Outstanding Research Award**: Excellence of Journal Publication, Feb. 2023.

Publications

- **[J24-3]** M.-H. Choi, **W. Han**, K. Min, D. Min, G. Han, K.-S. Shin, M. Kim, and J.-H. Park, "Recent Applications of Optical Elements in Augmented and Virtual Reality Displays: a Review," ACS Applied Optical Materials, vol. 2, no. 7, pp. 1247-1268 (2024).
- **[J24-2]** **W. Han**, J.-W. Lee, J.-Y. Shin, M.-H. Choi, H.-R. Kim, and J.-H. Park, "Varifocal occlusion in optical see-through near-eye display with single phase-only liquid crystal on Silicon," Photonics Research, vol 12, no 4, pp.833-854 (2024).
- **[J24-1]** M. Kim, **W. Han**, and J.-H. Park, "Slim Maxwellian near-eye display for virtual reality using point light source array," IEEE Journal of Selected Topics in Quantum Electronics, vol. 30, no. 2, article 3372001 (2024).
- **[J22-3]** **W. Han**, J. Han, Y.-G. Ju, J. Jang, and J.-H. Park, "Super multi-view near-eye display with a lightguide combiner", OPTICS EXPRESS, (2022), ***[Editor's Pick]***
- **[J22-2]** **W. Han**, J.-M. Jeon, M.-H. Choi, and J.-H. Park, "Lightguide type Maxwellian near-eye display with enlarged horizontal field of view by optical reconfiguration of input image", JOURNAL OF INFORMATION DISPLAY, (2022)
- **[J22-1]** M.-H. Choi, K.-S. Shin, J. Jang, **W. Han**, and J.-H. Park, "Waveguide-type Maxwellian near eye display using a pin-mirror holographic optical element array", OPTICS LETTERS, (2022)

Conferences

- **한웅섭**, 민교식, 최명호, 박재형, "진폭변조 SLM을 이용한 폐색 적용 홀로그래픽 증강현실 디스플레이," Optics and Photonics Congress 2024, 한국광학회 하계학술대회, paper T1C-III.03, ICC 제주, 2024년 7월. ***[우수논문상]***
- **한웅섭**, 최명호, 박재형, "강유전체 LCoS 와 도파관 기반 광원을 이용한 초다시점 비디오 투과형 근안 디스플레이," 제 35 회 한국광학회 정기총회 및 2024 동계학술발표회, paper W3B-III.02, 수원컨벤션센터, 2024 년 2 월.
- **W. Han**, M.-H. Choi, and J.-H. Park, "Video see-through super multi-view near eye display using waveguide-type light source and ferroelectric liquid crystal on silicon," SPIE AR/VR/MR, Optical Architectures for Displays and Sensing in Augmented, Virtual, and Mixed Reality (AR, VR, MR) V, paper 12913-13, San Francisco, United States, Jan. 2024.
- **W. Han**, J.-W. Lee, J.-Y. Shin, M.-H. Choi, H.-R. Kim, and J.-H. Park, "Varifocal-occlusion supported near-eye display using stack of geometric phase lenses and electrically switchable half wave plate", The 23rd International Meeting on Information Display (IMID 2023), Busan,Korea (Aug. 2023)
- **W. Han**, and J.-H. Park, "Eyebox-Expanded Retina-Projection Near-eye Display Using

DihedralCorner Reflector Array", Optica Imaging Congress 2023, 3D Imaging Acquisition and Display:Technology, Perception and Applications (3D), Boston, United States (Aug. 2023)

- **한웅섭**, 이재원, 신중엽, 최명호, 김학린, 박재형, "전기적으로 초점 변환되는 기하 위상 렌즈군을 이용한 가변초점 폐색 가능 증강현실 근안 디스플레이", 한국광학회 제34회 정기총회 및 2023 동계학술발표회, 부산,Korea (Feb. 2023)
- **W. Han**, J. Han, Y.-G. Ju, Jae-Hyeung Park, "Lightguide type optical see-through super multiviewnear-eye display using digital micromirror device and LED array", Digital Holography andThree-Dimensional Imaging (DH 2022), Cambridge, United Kingdom (Aug. 2022)
- **한웅섭**, 한지윤, 박재형, "디지털 마이크로미러 디바이스와 LED어레이를 이용한 도파관 기반 초다시점 투과형 근안 디스플레이", 한국광학회 Optics and Photonics Congress, 제주, Korea (Jul. 2022)
- **W. Han**, J.-M. Jeon, M.-H. Choi, and J.-H. Park, "Horizontal Field of View Enhancement of a Waveguide-Type Near-Eye-Display by Restructuring Input Image", The 21st International Meeting on Information Display, Seoul, Korea (Aug. 2021)

Projects

- Near-eye light field device technology development for hyper-realistic metaverse service, Electronics and Telecommunications Research Institute (ETRI), Korea (Jan. 2022 ~ Present)
- Research on occlusion-capable holographic augmented reality 3D near-eye display, National Research Foundation of Korea, Korea (Feb. 2022 ~ Present)

Services

- **Reviewer**: IEEE Transactions on Visualization and Computer Graphics (TVCG), IEEE ISMAR, Optics Express, Optics Continuum
- **Member:** Optica, OSK, SPIE