

Suyeon Choi

Curriculum Vitae

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Education

- 9/2020-Present **Ph.D. Student**, *Electrical Engineering*, Stanford University, Stanford, CA.
Advisor: Gordon Wetzstein
- 9/2019-6/2021 **M.Sc. Student**, *Electrical Engineering*, Stanford University, Stanford, CA.
Advisor: Gordon Wetzstein
- 3/2013-2/2019 **B.Sc. Student**, *Electrical Engineering*, Seoul National University, Seoul, Korea.
Advisor: Deog-kyoon Jeong, Soo-Mook Moon, and Byoung-ho Lee.
2-year absence to fulfill military duty (8/2015 – 5/2017)
- 3/2010-2/2013 Seoul Science High School, Seoul, Korea.

Internships

- 7/2020-9/2020 **Intern**, *New Experience Team*, NVIDIA, Santa Clara, CA.
Worked with Jonghyun Kim and Ward Lopes. Manager: Morgan McGuire

Awards

- 2019-2024 Kwanjeong Scholarship, Kwanjeong Foundation
- 2019-2021 Korea Government Scholarship, Korea Government
- 2019 2nd Prize, SPIE Student Optical Design Challenge 2019
- 2018 Grand Prize, Blockchain tech. contest, LINE X KIISE
- 2016 Bronze Medal, the University Students Mathematics Contest
- 2013-2018 Presidential Science Scholarship, Korea Student Aid Foundation
- 2012 Silver Medal, the International Physics Olympiad (**IPhO**)
- 2012 Youth Scholarship, Woongjin Foundation
- 2009 Gold Medal, the Korean Mathematical Olympiad
- 2008 Gold Medal, the Korean Physics Olympiad

Publications

† denotes equal contribution.

Journals

- [J7] **S. Choi**[†], M. Gopakumar[†], Y. Peng, J. Kim, and G. Wetzstein, "Neural 3D Holography: Learning Accurate Wave Propagation Models for 3D Holographic Virtual and Augmented Reality Displays", *ACM Transactions on Graphics* (Proc. SIGGRAPH Asia 2021).
- [J6] Y. Peng[†], **S. Choi**[†], J. Kim, and G. Wetzstein, "Speckle-free Holography with Partially Coherent Light Sources and Camera-in-the-loop Calibration", *Science Advances*, 2021.
- [J5] **S. Choi**, J. Kim, Y. Peng, and G. Wetzstein "Optimizing image quality for holographic near-eye displays with Michelson Holography", *Optica*, 2021.

- [J4] Y. Peng, **S. Choi**, N. Padmanaban, and G. Wetzstein "Neural Holography with Camera-in-the-loop Training", *ACM Transactions on Graphics* (Proc. SIGGRAPH Asia 2020).
 - [J3] D. Yoo†, S. Lee†, Y. Jo, J. Cho, **S. Choi**, and B. Lee "Volumetric Head-Mounted Display with Locally Adaptive Focal Blocks", *IEEE Transactions on Visualization and Computer Graphics*, 2020.
 - [J2] Y. Jo†, S. Lee†, D. Yoo, **S. Choi**, D. Kim, and B. Lee, "Tomographic Projector: Large Scale Volumetric Display with Uniform Viewing Experiences", *ACM Transactions on Graphics* (Proc. SIGGRAPH Asia 2019).
 - [J1] **S. Choi**, S. Lee, Y. Jo, D. Yoo, D. Kim, and B. Lee, "Optimal Binary Representation via Non-convex Optimization on Tomographic Displays", *Optics Express*, 2019.
- Conference Proceedings
- [C2] **S. Choi**, Y. Peng, J. Kim, and G. Wetzstein "High-quality holographic displays using double SLMs and camera-in-the-loop optimization", *Proc. SPIE 11765, Optical Architectures for Displays and Sensing in Augmented, Virtual, and Mixed Reality (AR, VR, MR) II*, 2021.
 - [C1] D. Yoo†, S. Lee†, Y. Jo, J. Cho, **S. Choi**, and B. Lee, "15 focal planes head-mounted display using LED array backlight", *Proc. SPIE 11040, SPIE Photonics West Student Optical Design Challenge*, 2019.

Public Demonstrations

- 2020 **Neural Holography**, Y. Peng, S. Choi, N. Padmanaban, J. Kim, G. Wetzstein, ACM SIGGRAPH Emerging Technologies.

Talks

- 2021 High-quality holographic displays using double SLMs, *SPIE AR,VR,MR Technical Talks*, Virtual.
- 2020 Neural Holography: High-quality, Real-time Computer-generated Holographic Displays, *Graphics and Mixed Environment Seminar (GAMES)*, Virtual.

Teaching Experience

Teaching Assistant

- Spring 2021 EE267: Virtual Reality, Stanford University

Undergraduate Teaching Assistant

- Fall 2018 Digital Systems Design and Experiments, Seoul National University
- Fall 2017 Introduction to Electromagnetism, Seoul National University
- Spring 2015 Introduction to Circuit Theory and Laboratory, Seoul National University
- Fall 2014 Digital Logic Design and Lab, Seoul National University

Tutor

Basic Physics, Seoul National University,

Spring 2018, Fall 2018, Spring 2015, Fall 2014

Professional Activities

- Reviewer Optics Express, ISMAR
- Member ACM, OSA, SPIE