Taeyoung Kim

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Education

UC Berkeley - Visiting Student 2025 - now
Computational Imaging Lab
Visiting Student, Computational Imaging Lab (Prof. Laura Waller)
Yonsei University - Integrated MS & Ph.D 2021 - now
Optical Imaging System Lab
Graduate Researcher, Optical Imaging System Lab (Prof. Seung Ah Lee)
Yonsei University - BS 2015 2021
School of Electronic and Electrical Engineering

Peer-reviewed Publications

Refereed Journal Article

◦ **Kim, T.**, Lee, K. C., Baek, N., Chae, H., & Lee, S. A. (2023). Aperture-encoded snapshot hyperspectral imaging with a lensless camera. APL Photonics, 8(6).
◦ Baek, N., Lee, Y., **Kim, T.**., Jung, J., & Lee, S. A. (2022). Lensless polarization camera for single-shot full-Stokes imaging. APL Photonics, 7(11).
◦ Lee, Y., Chae, H., Lee, K. C., Baek, N., **Kim, T.**., Jung, J., & Lee, S. A. (2022). Fabrication of integrated lensless cameras via UV-imprint lithography. IEEE Photonics Journal, 14(2), 1-8.

Conference Proceedings

◦ **Kim, T.**, Lee, Y., Jung, J., Lee, K. C., & Lee, S. A. (2024, August). 3D Lensless Camera for extended depth range with multiple point spread functions. In Conference on Lasers and Electro-Optics/Pacific Rim (p. We3G_3). Optica Publishing Group.
◦ **Kim, T.**, Lee, K. C., Lee, K., Baek, N., Jung, J., Kim, E., ... & Lee, S. A. (2024, February). High-speed lensless eye tracker for microsaccade measurement. In SPIE Advanced Biophotonics Conference (SPIE ABC 2023) (Vol. 13076, pp. 38-44). SPIE.

Patents (Selected)

◦ **Apparatus and method for measuring eye movement**
- Lee, S. A., **Kim, T. Y**., Lee, K. W., Baek, N. K., & Jung, J. W. (2024). U.S. Patent Application No. 18/052,192.
◦ **Methods for manufacturing phase masks and lens-less camera module**
- Lee, S. A., Chae, H. S., Lee, Y. J., Lee, K. C., Baek, N. K., **Kim, T.** Y., & Jung, J. W. (2023). U.S. Patent Application No. 18/168,887.

Honors

Awards
◦ **2024 ABC Best Poster Award**, Optical Society of Korea (2024)
◦ **2023 SPIE-ABC Young Investigator Award**, Optical Society of Korea (2023)
◦ **Outstanding Presentation Award**, Capstone Design Project, (2019)
Press
◦ **AIP Scilight**, "Improving hyperspectral imaging using a lensless camera", 2023
Grants
◦ **Selected Participant**, BK21(Brain Korea 21) International Joint Training Program, National Research Foundation of Korea (NRF), 2025
◦ **Undergraduate Research Fellow**, Undergraduate Research Program, Korea Science and Creativity Foundation (KOSAC), 2019
Society
◦ **Regular Member**, Yonsei EEHS(Honor Society)

Conference Activity (Selected)

◦ **Privacy-Preserving Imaging with Lensless Cameras Using Shift-Variant Point Spread Functions (Oral)**
- Optica Imaging Congress 2025: Kyung Chul Lee, Donggeon Bae, **Taeyoung Kim**, Joonsik Park, Yong Guk Kang, Nakkyu Baek, Seung Ah Lee
◦ **Task-Optimized Lensless Imaging With Trainable Phase Masks for Compact Spatial Encoding (Oral)**
- Optica Imaging Congress 2025: **Taeyoung Kim**, Jongho Kim, Jaewoo Jung, Seung Ah Lee
◦ **3D Lensless Camera for Extended Depth Range with Multiple Point Spread Functions (Poster)**
- SPIE-ABC 2023: **Taeyoung Kim**, Yujin Lee, Jaewoo Jung, Kyung Chul Lee, Seung Ah Lee
◦ **Aperture-encoded Snapshot Hyperspectral Imaging with a Lensless Camera (Oral)**
- SPIE-ABC 2023: **Taeyoung Kim**, Kyung Chul Lee, Nakkyu Baek, Hyesuk Chae, Seung Ah Lee
◦ **Design and construction of a compact eye-tracking system based on lensless imaging (Poster)**
- ICEIC 2023: **Taeyoung Kim**, Kyung Chul Lee, Jaewoo Jung, Nakkyu Baek, Seung Ah Lee
◦ **Snapshot hyperspectral imaging with a computational lensless camera (Oral)**
- TENCON 2022: **Taeyoung Kim**, Seung Ah Lee
◦ **Snapshot hyperspectral imaging with a computational lensless camera (Oral)**
- Photonics West 2022: **Taeyoung Kim**, Myeong Hun Seong, Seung Ah Lee
◦ **High-Speed Lensless Eye Tracker for Microsaccade Measurement (Oral)**
- ICCE-Asia 2020: **Taeyoung Kim**, Kyung Chul Lee, Kyungwon Lee, Nakkyu Baek, Jaewoo Jung, Juhyung Kim, Jinwook Kim, Young-Seok Seo, Seung Ah Lee

Domestic

◦ **Quantitative Fluorescence Imaging for Detection of Dental Plaque with Lensless Camera (Poster)**
- ABC 2024: **Taeyoung Kim**, Hyojun Ahn, Hojin Jang, Junbeom Bae, Jongho Choi, Yoon Hong Cheol, Seung Ah Lee
◦ **Jointly Optimized Lensless Camera for Enhanced Optical Encoding with Trainable Phase Mask (Poster)**
- ABC 2024: **Taeyoung Kim**, Jongho Kim, Jaewoo Jung, Seung Ah Lee
◦ **Task-specific Imaging Using a Jointly Optimized Lensless Camera with Learned Phase Mask (Poster)**
- OPC 2023: Jaewoo Jung, **Taeyoung Kim**, Yujin Lee, Seung Ah Lee
◦ **High-Speed Lensless Eye Tracking System for Microsaccade Measurement (Poster)**
- OPC 2022: **Taeyoung Kim**, Kyung Chul Lee, Kyungwon Lee, Nakkyu Baek, Jaewoo Jung, Seung Ah Lee
◦ **Snapshot hyperspectral imaging with a computational lensless camera (Poster)**
- OPC 2021: **Taeyoung Kim**, Myeong Hun Seong, Seung Ah Lee
◦ **High-Speed Lensless Eye Tracker for Microsaccade Measurement (Poster)**
- ABC 2020: **Taeyoung Kim**, Kyung Chul Lee, Kyungwon Lee, Nakkyu Baek, Jaewoo Jung, Juhyung Kim, Jinwook Kim, Young-Seok Seo, Seung Ah Lee
◦ **High-Speed Lensless Eye Tracker for Microsaccade Measurement (Poster)**
- OSK 2020: **Taeyoung Kim**, Kyung Chul Lee, Kyungwon Lee, Nakkyu Baek, Jaewoo Jung, Seung Ah Lee
◦ **High-Speed Lensless Camera for Microsaccade Measurement (Poster)**
- ABC 2019: **Taeyoung Kim**, Nak Kyu Baek, Jaewoo Jung, Minhyeok Lee, Seung Ah Lee

Teaching and Service

◦ **Electricity and Magnetism**(Fall 2023)), teaching Assistant with Prof. Seung Ah Lee
◦ **Introduction To Bioengineering For EE**(Spring 2023)), teaching Assistant with Prof. Seung Ah Lee
◦ **Introductory Digital Labs**(Spring 2022)), teaching Assistant with Prof. Seung Ah Lee
◦ **Introduction To Bioengineering For EE**(Spring 2021)), teaching Assistant with Prof. Seung Ah Lee
◦ **Control Engineering**(2019) Peer Tutor at Yonsei Electrical Engineering Honor Society

Skills

◦ **Technical**: Python(Pytorch, OpenCV), MATLAB, Fusion 360
◦ **Languages**: Korean (Native), English (Intermediate, OPIc IM)