

Jaewoo Jung

<https://lukael.kr>

Email: dev@lukael.kr

Updated: November 12, 2025

EDUCATION

- **Yonsei University** Seoul, Korea
Ph.D Candidate in Electrical and Electronics Engineering *2020 – Present*
- **Yonsei University** Seoul, Korea
B.S. in Electrical and Electronics Engineering *2015 – 2020*
- **Changwon Science High School** Changwon, Korea
Chemistry, Early graduation *2013 – 2015*

EXPERIENCE

- **Seoul National University** Seoul, Korea
Research Engineer, Imaging Intelligence Laboratory (Prof. Seung Ah Lee) *July 2025 – Present*
 - **Lensless Imaging**: deep learning for image reconstruction, model based deep learning network
- **LUXROBO Ltd.** Seoul, Korea
Research Engineer *Aug 2023 – June 2025*
 - **MODI Factory**: Electronic Design Automation, Golang Backend, MySQL database, Reinforcement Learning, MLOps
- **Yonsei University** Seoul, Korea
Graduate Research Assistant, Optical Imaging Systems Laboratory (Prof. Seung Ah Lee) *Mar 2020 – Aug 2023*
 - **Lensless Microscopy**: digital in-line holography
 - **Lensless Imaging**: deep learning for image reconstruction, model based deep learning network
Internship, Optical Imaging Systems Laboratory (Prof. Seung Ah Lee) *Jan 2019 – Feb 2020*
 - **Human-Biology Interaction**: biotic games
 - **Lensless Microscopy**: digital in-line holography
- **Toky** Seoul, Korea
Co-Founder, Engineer *Jul 2019 – Feb 2020*
 - **Voice recognition kiosk**: voice recognition, embedded software
- **Yonsei University** Seoul, Korea
Internship, Biological Cybernetics Laboratory (Prof. Dae Eun Kim) *Aug 2016 – Dec 2018*
 - **Swarm robotics**: Hardware, FreeRTOS, Wi-Fi, Bluetooth, Vibration control, Software, Formation, charging system
- **LUXROBO Ltd.** Seoul, Korea
Research Engineer *Mar 2017 – Dec 2017*
 - **Network Module Firmware(ESP32)**: FreeRTOS, Wi-Fi, BLE, USART
 - **OS Development**: RTOS research, Contiki OS
 - **Bluetooth 5**: Nordic nRF52DK, Mesh Network
 - **NLP**: Chatscript, Slack-Chatscript Linkage(Python)

SKILLS

- **Programming Skills**: C/C++, Python, MATLAB, Go
- **Technologies**: SketchUp, EasyEDA, Git
- **Languages**: Korean (Native), English (Fluent)

PUBLICATIONS

- Y. Lee, S. Byun, C. Yi, **J. Jung** and S. A. Lee, "Rolling shutter speckle plethysmography for quantitative cardiovascular monitoring," *Biomedical Optics Express*, 15(3), 1540-1552, 2024.
- K. Lee, K. C. Lee, **J. Jung**, H. Chae, and S. A. Lee, "High-resolution display screen as programmable illumination for Fourier ptychography," *Optics and Lasers in Engineering*, 177, 108121, 2024.
- K. C. Lee, J. Bae, N. Baek, **J. Jung**, W. Park, and S. A. Lee, "Design and single-shot fabrication of lensless cameras with arbitrary point spread functions," *Optica*, vol. 10, no. 1, pp. 72–80, 2023.
- C. Yi, **J. Jung**, J. Im, K. C. Lee, E. Chung, and S. A. Lee, "Single-shot temporal speckle correlation imaging using rolling shutter image sensors," *Optica*, vol. 9, no. 11, pp. 1227–1237, 2022.
- N. Baek, Y. Lee, T. Kim, **J. Jung**, and S. A. Lee, "Lensless polarization camera for single-shot full-stokes imaging," *APL Photonics*, 2022.
- Y. Lee, H. Chae, K. C. Lee, N. Baek, T. Kim, **J. Jung**, and S. A. Lee, "Fabrication of integrated lensless cameras via uv-imprint lithography," *IEEE Photonics Journal*, vol. 14, no. 2, pp. 1–8, 2022.
- K. C. Lee, K. Lee, **J. Jung**, S. H. Lee, D. Kim, and S. A. Lee, "A smartphone based fourier ptychographic microscope using the display screen for illumination," *ACS Photonics*, vol. 8, no. 5, pp. 1307–1315, 2021.

CONFERENCE PRESENTATIONS (SELECTED)

- Poster, Advanced Biophotonics Conference, SPIE 2025
Jaewoo Jung, Donggeon Bae, Kyung Chul Lee, Seung Ah Lee, *Multi-view Lensless Imaging using 3D Gaussian Splatting*
- Poster, ICEIC, IEEE/IEIE 2023
Jaewoo Jung, Yujin Lee, Seung Ah Lee, *Jointly Optimized Lensless Imaging System with Trainable Phase Mask for Task-specific Imaging*
- Poster, Advanced Biophotonics Conference, OSK 2022
Jaewoo Jung, Yujin Lee, Seung Ah Lee, *Jointly Optimized Lensless Imaging System with Trainable Phase Mask for Task-specific Imaging*
- Oral, IEEE Region 10 Conference, IEEE/IEIE 2022
Jaewoo Jung, Yujin Lee, Seung Ah Lee, *Jointly Optimized Lensless Imaging System with Trainable Phase Mask for Task-specific Imaging*
- Oral, 30th ACM International Conference on Multimedia, ACM MM 2022
Kyungwon Lee, Yu-Kyung Jang, **Jaewoo Jung**, Dong Hwan Kim, Hyun Jean Lee, Seung Ah Lee, *EuglPollock: Rethinking Interspecies Collaboration through Art Making*
- Poster, Gordon Research Conference Image Science, GRC 2022
Jaewoo Jung, Donggeon Bae, Kyung Chul Lee, Nakkyu Baek, Tae Young Kim, Ernest K. Ryu, Seung Ah Lee, *Deep Learning Approaches for Image Reconstruction in Lensless Cameras*
- Oral, ICCE-ASIA, IEEE/IEIE 2021
Jaewoo Jung, Tae Young Kim, Donggeon Bae, Ernest K. Ryu, Seung Ah Lee, *Image Reconstruction in Lensless Cameras with Unrolled Optimization Algorithms*
- Poster, Optics and Photonics Congress, OSK 2021
Jaewoo Jung, Tae Young Kim, Donggeon Bae, Ernest K. Ryu, Seung Ah Lee, *Unrolled ADMM for Image Reconstruction in Lensless Cameras*
- Extended Abstracts(Demo), ACM Conference on Human Factors in Computing Systems, CHI 2020
Kyungwon Lee, **Jaewoo Jung**, Seung Ah Lee, *MicroAquarium: An immersive and interactive installation with living microorganisms*
- Oral, ICROS, ICROS 2018
Minchul Kim, **Jaewoo Jung**, DaeEun Kim, *Swarm Robots Using Vibration Motor Control*

PATENTS

- S. A. Lee, T. Kim, K. Lee, **J. Jung**, N. Baek, Apparatus and method for measuring eye movement, US Patent, 12062190
- S. A. Lee, K. C. Lee, K. Lee, **J. Jung**, S. H. Lee, Smartphone for obtaining Fourier ptychography image and method for obtaining Fourier ptychography image using smartphone, US Patent, 11880965
- S. A. Lee, H. Chae, Y. Lee, K. C. Lee, N. Baek, T. Kim, **J. Jung**, Methods for manufacturing phase masks and lens-less camera module, US Patent, 12108134
- S. A. Lee, K. C. Lee, N. Baek, W. Park, J.H. Bae, **J. Jung**, Apparatus and method for manufacturing phase masks for lens-less camera, US Patent, 12343954

AWARDS AND HONORS

- **Best Poster Awards**, SPIE Advanced Biophotonics Conference 2025
Jaewoo Jung, Donggeon Bae, Kyung Chul Lee, Seung Ah Lee, *Multi-view Lensless Imaging using 3D Gaussian Splatting*
- **Best Poster Awards**, Advanced Biophotonics Conference Optical Society of Korea 2022
Jaewoo Jung, Yujin Lee, Seung Ah Lee, *Jointly Optimized Lensless Imaging System with Trainable Phase Mask for Task-specific Imaging*
- **Silver Awards**, 28th Samsung Humantech Paper Awards 2022
Kyung Chul Lee, Nakkyu Baek, **Jaewoo Jung**, Junghyun Bae, Seung Ah Lee, Wook Park, *Design and Fabrication of Custom Phase-Masks for UltraThin Lensless Camera*
- **Grants**, Undergraduate Research Program, KOFAC 2019
Jaewoo Jung, Nakkyu Baek, Tae Young Kim, Minhyuk Lee, Seung Ah Lee, *High speed lensless camera for microsaccades measurement*
- **4th Awards**, International Student Car Competition, KTSA 2019
Vision Team, *Autonomous driving cart*
- **2nd Awards**, International Student Car Competition, KTSA 2018
LIDAR Team, *Autonomous driving cart*
- **1st Awards**, Embedded Software Contest, KESSIA 2013
Hardware Engineer, *Minesweeper Robot using LEGO Mindstorm*
- **1st Awards**, R&E Festival, KOSAF 2013
Develop Filters made from ESM's Toxic substances Absorptive Ability

PROJECTS

- Arxiv Monitoring Bot
- Dev Environment
- Various Swarm Behavior Inspired by Nature using Vibration Locomotion Robots
- Core-XY Autonomous Chess Board
- Localization using Multiple Gyroscope
- Autonomous Driving Model Car
- Humanoid(KHR-1)
- LED cube($8 \times 8 \times 8$)
- Robot Soccer
- Unmanned Aerial Vehicle (Quadcopter)
- Guitar Effect Pedal

TEACHING AND SERVICES

- **Introduction To Bioengineering For EE**(Spring 2023), teaching assistant with Prof. Seung Ah Lee
- **Introduction To Bioengineering For EE**(Spring 2021), teaching assistant with Prof. Seung Ah Lee
- **Analog Electronics Lab.**(Fall 2020), teaching assistant with Prof. Seung Ah Lee

- **SBTM(Robot club in Yonsei University)**

President

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Seoul, Korea

Jan 2017 – Dec 2017