Jaewoo Jung

AI/ML Engineer

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Education

Yonsei University, Ph.D Candidate in Electrical and Electronics Engineering – Seoul, South Korea — Mar 2020 – present

- Advisor: Prof. Seung Ah Lee

Yonsei University, B.S. in Electrical and Electronics Engineering – Seoul, South Korea — Mar 2015 – Feb 2020

Changwon Science High School, in Chemistry – Changwon, South Korea — Mar 2013 – Feb 2015

- Early Graduated

Experience

Research Engineer, Seoul National University – Seoul, South Korea — July 2025 – present

Imaging intelligence Laboratory, supervised by Prof. Seung Ah Lee

- Research on lensless image reconstruction using deep learning

Research Engineer, LUXROBO Co., Ltd. – Seoul, South Korea — July 2023 – June 2025

Developed MODI Factory

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Graduate Research Assistant, Yonsei University – Seoul, South Korea — Mar 2020 – Aug 2023

Optical Imaging Laboratory, supervised by Prof. Seung Ah Lee

- Developed MODI Factory

Internship, Yonsei University – Seoul, South Korea — Jan 2019 – Mar 2020

Optical Imaging Laboratory, supervised by Prof. Seung Ah Lee

- Developed MODI Factory

Co-Founder & Engineer, Toky – Seoul, South Korea — July 2019 – Feb 2020

Voice recognition kiost

- Voice recognition
- Firmware development

Internship, Yonsei University – Seoul, South Korea — Aug 2016 – Dec 2018

Biological Cybernetics Laboratory, supervised by Prof. Dae Eun Kim

- Swarm Robotics

Research Engineer, LUXROBO Co., Ltd. – Seoul, South Korea — Mar 2017 – Dec 2017

Firmware development

- Developed MODI Factory

Skills

Languages: Python, C/C++, Go, MATLAB

ML Frameworks: PyTorch

Tools: Docker, Git, EasyEDA, SketchUp

Languages: Korean (Native), English (Fluent)

Peer-reviewed Publications

Rolling shutter speckle plethysmography for quantitative cardiovascular monitoring 2024
Y. Lee, S. Byun, C. Yi, *J. Jung*, S. A. Lee
10.1364/BOE.511755 (Biomedical Optics Express)

High-resolution display screen as programmable illumination for Fourier ptychography 2024
K. Lee, K. C. Lee, *J. Jung*, H. Chae, S. A. Lee
10.1016/j.optlaseng.2024.108121 (Optics and Lasers in Engineering)

Design and single-shot fabrication of lensless cameras with arbitrary point spread functions 2023
K. C. Lee, J. Bae, N. Baek, *J. Jung*, W. Park, S. A. Lee
10.1364/OPTICA.466072 (Optica)

Single-shot temporal speckle correlation imaging using rolling shutter image sensors 2022
C. Yi, *J. Jung*, J. Im, K. C. Lee, E. Chung, S. A. Lee
10.1364/OPTICA.465361 (Optica)

Lensless polarization camera for single-shot full-stokes imaging 2022
N. Baek, Y. Lee, T. Kim, *J. Jung*, S. A. Lee
10.1063/5.0120465 (APL Photonics)

Fabrication of integrated lensless cameras via uv-imprint lithography 2022
Y. Lee, H. Chae, K. C. Lee, N. Baek, T. Kim, *J. Jung*, S. A. Lee
10.1109/JPHOT.2022.3157373 (IEEE Photonics Journal)

A smartphone based fourier ptychographic microscope using the display screen for illumination 2021
K. C. Lee, K. Lee, *J. Jung*, S. H. Lee, D. Kim, S. A. Lee
10.1021/acsphotonics.1c00350 (ACS Photonics)

Patents

1. Apparatus and method for manufacturing phase masks for lens-less camera (US Patent 12,343,954)
2. Methods for manufacturing phase masks and lens-less camera module (US Patent 12,108,134)
3. Apparatus and method for measuring eye movement (US Patent 12,062,190)
4. Smartphone for obtaining Fourier ptychography image and method for obtaining Fourier ptychography image using smartphone (US Patent 11,880,965)

Conference Presentations(Selected)

Multi-view Lensless Imaging using 3D Gaussian Splatting 2025
J. Jung, D. Bae, K. C. Lee, S. A. Lee
(Poster, Advanced Biophotonics Conference, SPIE)

Jointly Optimized Lensless Imaging System with Trainable Phase Mask for Task-specific Imaging 2022
J. Jung, Y. Lee, S. A. Lee
(Poster, Advanced Biophotonics Conference, OSK)

Jointly Optimized Lensless Imaging System with Trainable Phase Mask for Task-specific Imaging 2022
J. Jung, Y. Lee, S. A. Lee
(Oral, IEEE Region 10 Conference, IEEE/IEIE)

EuglPollock: Rethinking Interspecies Collaboration through Art Making 2022
K. Lee, Y. Jang, *J. Jung*, D. H. Kim, H. J. Lee, S. A. Lee
(Oral, 30th ACM International Conference on Multimedia, ACMMM)

Deep Learning Approaches for Image Reconstruction in Lensless Cameras 2022
J. Jung, D. Bae, K. C. Lee, N. Baek, T. Kim, E. K. Ryu, S. A. Lee
(Poster, Gorden Research Conference Image Science, GRC)

Image Reconstruction in Lensless Cameras with Unrolled Optimization Algorithms 2021
J. Jung, T. Kim, D. Bae, E. K. Ryu, S. A. Lee
(Oral, ICCE-ASIA, IEEE/IEIE)

MicroAquarium: An immersive and interactive installation with living microorganisms 2020
K. Lee, *J. Jung*, S. A. Lee
(Extended Abstracts(Demo), ACM Conference on Human Factors in Computing Systems, CHI)

Swarm Robots Using Vibration Motor Control 2018
M. Kim, *J. Jung*, D. E. Kim
(Oral, ICROS, ICROS)

Honors & Awards

- Best Poster Awards, Advanced Biophotonics Conference, SPIE (2025)
- Best Poster Awards, Advanced Biophotonics Conference, Optical Society of Korea (2022)
- Silver Awards, 28th Samsung Humantech Paper Awards, Samsung Electronics (2022)
- Grants, Undergraduate Research Program, KOFAC (2019)
- 4th Awards, International Student Car Competition, KTSA (2019)
- 2nd Awards, International Student Car Competition, KTSA (2018)
- 1st Awards, Embedded Software Contest, KESSIA (2013)
- 1st Awards, R&E Festival, KOSAF (2013)

Teaching & Services

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

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
(8×8×8)

Robot Soccer

Unmanned Aerial Vehicle (Quadcopter)

Guitar Effect Pedal

Extracurricular Activities

President, SBTM (Robotics Club in Yonsei University) Jan 2017 – Dec 2017