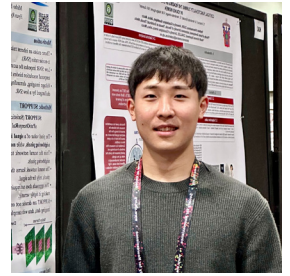


Seungjae Han

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 🏠 [stevejayh.github.io](https://github.com/stevejayh)

👤 SteveJayH
 📄 Google Scholar

I am a PhD candidate interested in developing novel technologies to acquire & analyze big data from brain. My particular interests are fast & scalable processing algorithm and AI-driven microscopy. I received **2023 Trainee Profesional Development Award** from Society for Neuroscience (SfN) and **Outstanding Research Award** from Association of Korean Neuroscientists.



EDUCATION

2020-Now	KAIST Ph.D. Candidate in School of Electrical Engineering	Daejeon, South Korea Advisor : Young-Gyu Yoon
2017-20	Yonsei University Bachelor of Science in School of Integrated Technology	Seoul, South Korea Advisor : Jiwon Seo

PUBLICATIONS

* co-first authors, ** co-corresponding authors

- 2024 **From Pixels to Information: Artificial Intelligence in Fluorescence Microscopy**
S. Han, J. Y. You, M. Eom, S. Ahn, E.-S. Cho, Y.-G. Yoon
Advanced Photonics Research
- 2023 **Statistically unbiased prediction enables accurate denoising of voltage imaging data**
 M. Eom*, **S. Han***, P. Park*, G. Kim, E.-S. Cho, J. Sim, K.-H. Lee, S. Kim, H. Tian, U. L. Böhm, E. Lowet, H. Tseng, J. Choi, S. E. Lucia, S. H. Ryu, M. Rózsa, S. Chang, P. Kim, X. Han, K. D. Piatkevich, M. Choi, C.-H. Kim, A. E. Cohen, J.-B. Chang, Y.-G. Yoon
Nature Methods [🏆 **Selected as the cover, KAIST News, and KAIST Breakthrough**]
- In vivo whole-brain imaging of zebrafish larvae using three-dimensional fluorescence microscopy**
 E.-S. Cho, **S. Han**, G. Kim, M. Eom, K.-H. Lee, C.-H. Kim, Y.-G. Yoon
Journal of Visualized Experiments
- Robust and Efficient Alignment of Calcium Imaging Data through Simultaneous Low Rank and Sparse Decomposition**
 J. Cho*, **S. Han***, E.-S. Cho, K. Shin, Y.-G. Yoon
IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)
- 2022 **IMPASTO: Multiplexed cyclic imaging without signal removal via self-supervised neural unmixing**
 H. Kim*, S. Bae*, J. Cho, H. Nam, J. Seo, **S. Han**, E. Yi, E. Kim, Y.-G. Yoon**, J.-B. Chang**
bioRxiv
- Three-dimensional fluorescence microscopy through virtual refocusing using a recursive light propagation network**
 C. Shin*, H. Ryu*, E.-S. Cho, **S. Han**, K.-H. Lee, C.-H. Kim, Y.-G. Yoon
Medical Image Analysis
- 2021 **Nanoscale resolution imaging of the whole mouse embryos and larval zebrafish using expansion microscopy**
 J. Sim*, C. E. Park*, I. Cho*, K. Min, M. Eom, **S. Han**, H. Jeon, H.-J. Cho, E.-S. Cho, A. Kumar, Y. Chong, J. S. Kang, K. D. Piatkevich, E. E. Jung, D.-S. Kang, S.-K. Kwon, J. Kim, K.-J. Yoon, J.-S. Lee, E. S. Boyden, Y.-G. Yoon**, J.-B. Chang**
bioRxiv

3DM: Deep decomposition and deconvolution microscopy for rapid neural activity imaging

E.-S. Cho*, **S. Han***, K.-H. Lee, C.-H. Kim, Y.-G. Yoon

Optics Express [🏆 **Editor's pick, Image of the Week**]

Efficient Neural Network Approximation of Robust PCA for Automated Analysis of Calcium Imaging Data

S. Han, E.-S. Cho, I. Park, K. Shin, Y.-G. Yoon

International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI)

Smartphone Application to Estimate Distances from LTE Base Stations Based on Received Signal Strength Measurements

S. Han, T. Kang, J. Seo

International Technical Conference on Circuits/Systems, Computers and Communications (ITC-CSCC) [**Oral**]

Observation of Human Trajectory in Response to Haptic Feedback from Mobile Robot

H.-S. Moon, W. Kim, **S. Han**, J. Seo

International Conference on Control, Automation and Systems (ICCAS)

PUBLICATIONS (Domestic)

Machine Learning Based Sound Source Localization in the Indoor Environment

S. Han, S. Kim, J. Seo

Korean Navigation Institute (KONI) Conference

Sound Source Localization in the Indoor Environment Based on Time Difference of Arrival Measurements

S. Kim, **S. Han**, J. Seo

Korean Navigation Institute (KONI) Conference

Development of Human Following Mobile Robot Utilizing Haptic Signals

S. Han, H.-S. Moon, J. Seo

Korean Navigation Institute (KONI) Conference

AWARDS AND HONORS

2023	Trainee Professional Development Award	Society for Neuroscience
	AKN Outstanding Research Award (IBS/AKN Pre-doctoral award)	Association of Korean Neuroscientists
	Best Teaching Assistant Award (Course: Signals and Systems)	KAIST EE
2020-Now	Government-sponsored scholar	KAIST
2019	Undergraduate Research Program (Research fund) & Outstanding Project Award	Korea Foundation for the Advancement of Science & Creativity
2019	Short-term visiting researcher to Boğaziçi University, Turkey (Travel and lodging cost)	Yonsei University
2019	Excellence Award (START-UP102: Enterprise and Entrepreneurship)	Yonsei University
2017-19	IT Consilience Creative Program (Full tuition waiver & monthly stipend throughout undergraduate)	Ministry of Science, ICT and Future Planning

TALKS

- 2023 **SUPPORT: Versatile denoising AI for microscopy data** Korea Institute of Science and Technology (KIST) (2023. 10.)
- 2022 **Efficient methods to analyze big data from the brain** Songlim high school (2022. 8.)

PROFESSIONAL SERVICE

- Reviewer **ICLR** 2024 (3 papers)
 NeurIPS 2023 (5 papers), 2024 (6 papers)
 MICCAI 2022 (5 papers), 2023 (3 papers), 2024 (4 papers)

MENTORING EXPERIENCE

- 2024 **Hayeong You** (Undergraduate Student - M.S. student at KAIST)
 Self-supervised learning, Image processing, Denoising
- 2021 **Eunsu Kim** (Undergraduate Student at KAIST)
 Machine learning basics, Processing multiplexed images ([preprint](#) released on bioRxiv)

TEACHING EXPERIENCE

Teaching assistant (TA)

- 2023 **Machine learning and Big data (Expert course)**, Seongnam-KAIST Center For Next Generation ICT
 Course for general public and office workers, about Reinforcement Learning, Head TA
 Signals and Systems (EE205), KAIST
 Introductory level course, Head TA
- 2022 **Electronics Design Lab (EE305)**, KAIST
 Undergraduate level course, about Circuits
 Special Topics in Electrical Engineering <AI Capston Design> (EE488), KAIST
 Senior level course, about Reinforcement Learning, Head TA
- 2021 **Electronics Design Lab (EE405A)**, KAIST
 Senior level course, about Robotics
 Basics of Artificial Intelligence (CoE202A), KAIST
 Introductory level course, about Computer Vision
- 2020 **Basics of Artificial Intelligence (CoE202A)**, KAIST
 Introductory level course, about Computer Vision

EXTRACURRICULAR ACTIVITIES

Counseling Assistant (CA)

- 2024 Spring, **Undergraduate Students** at KAIST EE
- 2023 Fall Help undergraduate students to get various information related to school life

REFERENCES

Young-Gyu Yoon, Associate professor at KAIST
Ph.D. advisor at KAIST

✉ ygyoon@kaist.ac.kr

🏠 [Lab homepage](#)

Kijung Shin, Associate Professor at KAIST

✉ kijungs@kaist.ac.kr

🏠 [Lab homepage](#)

ART EXHIBITIONS

Art Exhibition at Gallery Ori (KAIST Art Museum)
2024. 06. - 2024. 07.

KAIST Small size Art Exhibition
2023. 05. 30. - 2023. 06. 02.

Design of this CV is based on [Mina Lee's CV](#)