

Seungjae Han

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

👤 SteveJayH
🔗 [Google Scholar](https://scholar.google.com/citations?user=SteveJayH)

Keywords Neuroengineering
Computational imaging
Computer vision
Optimization
Signal processing

EDUCATION

2020-Now **KAIST**
Ph.D. Candidate in School of Electrical Engineering
Advisor : Young-Gyu Yoon

2017-20 **Yonsei University**
Bachelor of Science in School of Integrated Technology
Advisor : Jiwon Seo

PUBLICATIONS

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

- 2023 **[In vivo whole-brain imaging of zebrafish larvae using three-dimensional fluorescence microscopy](#)**
Eun-Seo Cho, [Seungjae Han](#), Gyuri Kim, Minho Eom, Kang-Han Lee, Cheo-Hee Kim, Young-Gyu Yoon
Journal of Visualized Experiments
- [Robust and Efficient Alignment of Calcium Imaging Data through Simultaneous Low Rank and Sparse Decomposition](#)**
Junmo Cho*, [Seungjae Han](#)*, Eun-Seo Cho, Kijung Shin, Young-Gyu Yoon
IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)
- 2022 **[IMPASTO: Multiplexed cyclic imaging without signal removal via self-supervised neural unmixing](#)**
Hyunwoo Kim*, Seoungbin Bae*, Junmo Cho, Hoyeon Nam, Junyoung Seo, [Seungjae Han](#), Euiin Yi, Eunsu Kim, Young-Gyu Yoon**, Jae-Byum Chang**
Preprint
- [Statistically unbiased prediction enables accurate denoising of voltage imaging data](#)**
Minho Eom*, [Seungjae Han](#)*, Gyuri Kim, Eun-Seo Cho, Jueun Sim, Pojeong Park, Kang-Han Lee, Seonghoon Kim, Márton Rózsa, Karel Svoboda, Myunghwan Choi, Cheol-Hee Kim, Adam Cohen, Jae-Byum Chang, Young-Gyu Yoon
Preprint
- [Three-dimensional fluorescence microscopy through virtual refocusing using a recursive light propagation network](#)**
Changyeop Shin*, Hyun Ryu*, Eun-Seo-Cho, [Seungjae Han](#), Kang-Han Lee, Cheol-Hee Kim, Young-Gyu Yoon
Medical Image Analysis
- 2021 **[Nanoscale resolution imaging of the whole mouse embryos and larval zebrafish using expansion microscopy](#)**
Jueun Sim*, Chan E Park*, In Cho*, Kyeongbae Min, Minho Eom, [Seungjae Han](#), Hyungju Jeon, Hyun-Ju Cho, Eun-Seo Cho, Ajeet Kumar, Yosep Chong, Jeong Seuk Kang, Kiryl D. Piatkevich, Erica E. Jung, Du-Seock Kang, Seok-Kyu Kwon, Jinhyun Kim, Ki-Jun Yoon, Jeong-Soo Lee, Edward S. Boyden, Young-Gyu Yoon**, Jae-Byum Chang**
Preprint
- [3DM: Deep decomposition and deconvolution microscopy for rapid neural activity imaging](#)**
Eun-Seo Cho*, [Seungjae Han](#)*, Kang-Han Lee, Cheol-Hee Kim, Young-Gyu Yoon
Optics Express [🏆 **Editor's pick, Image of the Week**]
- [Efficient Neural Network Approximation of Robust PCA for Automated Analysis of Calcium Imaging Data](#)**
[Seungjae Han](#), Eun-Seo Cho, Inkyu Park, Kijung Shin, Young-Gyu Yoon
International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI)

- 2019 **Smartphone Application to Estimate Distances from LTE Base Stations Based on Received Signal Strength Measurements**
Seungjae Han, Taewon Kang, Jiwon Seo
International Technical Conference on Circuits/Systems, Computers and Communications (ITC-CSCC) [**Oral**]
- 2018 **Observation of Human Trajectory in Response to Haptic Feedback from Mobile Robot**
 Hee-Seung Moon, Woohyun Kim, Seungjae Han, Jiwon Seo
International Conference on Control, Automation and Systems (ICCAS)

PUBLICATIONS (Domestic)

- 2019 **Machine Learning Based Sound Source Localization in the Indoor Environment**
Seungjae Han, Sanghyeon Kim, Jiwon Seo
Korean Navigation Institute (KONI) Conference
- Sound Source Localization in the Indoor Environment Based on Time Difference of Arrival Measurements**
 Sanghyeon Kim, Seungjae Han, Jiwon Seo
Korean Navigation Institute (KONI) Conference
- 2018 **Development of Human Following Mobile Robot Utilizing Haptic Signals**
Seungjae Han, Hee-Seung Moon, Jiwon Seo
Korean Navigation Institute (KONI) Conference

AWARDS AND HONORS

- 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 (Tuition waiver & monthly stipend),**
 Ministry of Science, ICT and Future Planning

TALKS

- 2022 **Efficient methods to analyze big data from the brain,** Songlim high school (2022. 8)

TEACHING EXPERIENCE

Teaching assistant

- 2023 **Signals and Systems (EE205), KAIST**
 Introductory level course,
- 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
- 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

MENTORING EXPERIENCE

2021 **Eunsu Kim** (Undergraduate Student at KAIST)
Machine learning basics, Processing multiplexed images ([preprint](#) released on bioRxiv)

PROFESSIONAL SERVICE

Reviewer **NeurIPS 2023**
MICCAI 2022 (5 papers), **2023** (3 papers)

REFERENCES

Young-Gyu Yoon, Assistant professor at KAIST

Ph.D. advisor at KAIST

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🏠 [Lab homepage](#)

Kijung Shin, Ewon Endowed Assistant Professor at KAIST

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