JAEHYEOK BAE

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EDUCATION

Stanford University   **Sep 2024 - Present**
Ph.D. in Electrical Engineering   *Stanford, CA*

Seoul National University   **Mar 2016 - Aug 2023**
B.S. in Electrical and Computer Engineering   *Seoul, South Korea*

· Graduate Summa cum laude (5th *place / 148*), Total GPA : *4.23 / 4.30* (Major GPA : *4.27 / 4.30*)
* Served mandatory military service between 2018 - 2019

PUBLICATIONS

[1] **J. Bae**, C. Alkan, S. Vasanawala, J. M. Pauly, and K. Setsompop, "Quicksamp: Towards simple, real-time-optimized sampling patterns for 3d accelerated mri," in *Proceedings of the ISMRM Annual Meeting*, 2025 (**Magna Cum Laude**)

[2] A. Nurdinova, W. Huang, D. R. Abraham, **J. Bae**, Y. Lin, K. Setsompop, and B. A. Hargreaves, "Neural space-time modeling for motion-corrected mr reconstruction," in *MICCAI Workshop on Machine Learning for Medical Image Reconstruction*, 2025

[3] S. Hong, **J. Bae**, J. Lee, and S. Y. Chun, "Adaptive selection of sampling-reconstruction in Fourier compressed sensing," in *Proceedings of The European Conference on Computer Vision (ECCV)*, 2024

[4] **J. Bae**, J. Lee, and S. Kim, "PNI : Industrial anomaly detection using position and neighborhood information," in *Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV)*, 2023

[5] J. Kim, **J. Bae**, G. Park, D. Zhang, and Y. Kim, "N-ImageNet: Towards robust, fine-grained object recognition with event cameras," in *Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV)*, 2021

EXPERIENCE

Setsompop Lab.   **Sep 2024 - Present**
Ph.D. Student (Advisors: Prof. Kawin Setsompop and Prof. John M. Pauly)

· Developing real-time sampling pattern optimization methods and motion correction techniques for deep learning-based accelerated MRI.

Lab. for Imaging Science and Technology   **Mar 2023 - Nov 2023**
Research Intern (Advisor: Prof. Jongho Lee)

· Proposed a novel adaptive selection scheme of sampling-reconstruction pairs for Fourier compressed sensing (CS) by quantifying the high-frequency Bayesian uncertainty of the input.

Gauss Labs Inc.   **Jan 2022 - Nov 2022**
Computer Vision Applied Scientist Intern

· Proposed a novel anomaly detection and localization algorithm for industrial datasets, by training a normal feature distribution using position and neighborhood information of local features.

Optical Engineering and Quantum Electronics Lab.   **Mar 2021 - Dec 2021**
Research Intern (Advisor: Prof. Byoungho Lee)

· Proposed a gaze-contingent augmented reality (AR) rendering system for video see-through display with a focus-tunable lens (FTL), a pupil tracker, and a time-of-flight (ToF) camera.

3D Vision Lab.   **April 2020 - Mar 2021**
Research Intern (Advisor: Prof. Youngmin Kim)

· Created N-ImageNet, a large dataset for robust object recognition with event cameras and performed circuit-level analysis on event camera to investigate noise sources, such as hot pixels and background noises.

SKILLS & LANGUAGES

Programming Languages	Python, MATLAB, C/C++
Libraries/Frameworks	PyTorch, TensorFlow, Scikit-learn
Languages	Korean (Native), English

SCHOLARSHIPS

ILJU Overseas Ph.D. Scholarship, *ILJU Academy & Culture Foundation*   2024 - Present
- 5-year Research award and merit-based prize for academic excellence.

Presidential Science Scholarship, *Korea Student Aid Foundation (KOSAF)*   2016 - 2021
- 4-year Full tuition and additional stipends (*$5,000 / year*) for academic excellence.

HONORS AND AWARDS

Magna Cum Laude Merit Award, *ISMRM Annual Meeting*   2025

2nd place in the 2022 SNU FastMRI Challenge, *Seoul National University*   2022

Silver Medal in the University Students Mathematics Contest, *Korean Mathematical Society*   2017

TEACHING AND VOLUNTEERING EXPERIENCES

Contest Coordinator
Organized and supervised the 2023 SNU FastMRI Challenge, *Seoul National University*   2023

Undergraduate Student Tutor, *Seoul National University*   2017 - 2023
Subjects: Random Variables, Communications, Algorithms, Foundation of Physics 1 & 2.

Mentoring
International Students Integrated Peer Tutoring Program, *Seoul National University*   Fall 2021
University Student's Talent Donation Camp, *Korea Student Aid Foundation*   2016, 2017

EXTRACURRICULAR ACTIVITIES

SNU Tomorrow's Edge Membership(STEM)   Mar 2021 - Aug 2022
12th Vice Chairman of SNU Honor Society   *Seoul National University*

· A student organization that presents a vision of "Outstanding engineering knowledge, broad consideration of different perspectives, and active communication with society."
· Served as a leader of 200+ STEM members, encouraged activities; interdisciplinary academic seminars, and mentoring programs for teenagers.
· Wrote a book for raising scholarships to future engineers: *Wanna be Engineer*, Megastudy-books, 2021.

Republic of Korea Army   Jan 2018 - Sep 2019
Soldier of Information Security Specialist   *Gyeryong, Republic of Korea*

· Completed mandatory military service (honorable discharge)
· Information protection tasks to prevent computer viruses and hacking at the Army headquarters.