Sangwoo Han

Seoul National University

1, Gwanak-ro, Gwanak-gu

Seoul, Korea

sangw876@snu.ac.kr

+82 10-8550-0631

https://github.com/Seismic-wave-Han

Education

Seoul National University   March 2021 – August 2026

Combined M.S. and Ph.D. program in Seismology and Geophysics (GPA: 4.22/4.3)   *Seoul, Republic of Korea*

Seoul National University   March 2014 – February 2021

School of Earth and Environmental Sciences (GPA: 3.9/4.3 Summa Cum Laude)   *Seoul, Republic of Korea*
- B.S. in Earth and Environmental Sciences
- B.S. in Computational Sciences

Experience

Visiting Researcher   November 2024 – May 2025

Rice University   *Houston, Texas, United State*
- Advisor: Jonathan Ajo-Franklin (email: ja62@rice.edu)
- Microearthquake Detection and Location by using Distributed Acoustic Sensing (DAS) and Nodal Geophone Array in Imperial Valley, California

Teaching Assistant & Research Assistant   2021, 2022, 2023

Seoul National University   *Seoul, Republic of Korea*

ML&DL internship   December, 2019 – February, 2020

Enlighten (Solar power energy IT platform)   *Seoul, Republic of Korea*
- Forecasting solar power generation using sun behavior and climate data by ML&DL

Awards & Honors

NRF Doctoral Research Fellowship

National Research Foundation of Korea   *2025-2026*

2025 SSA Annual Meeting Student Presentation Awards

Seismological Society of America   *2025*

Support Program for Outstanding Graduate Students' International Joint Research

Brain Korea 21 grant   *2024-2025*

Seoul National University Alumni Association Scholarship/Development Fund Scholarship

Seoul National University   *2022-2023*

Brain Korea 21 Scholarship

National Research Foundation of Korea   *2021,2022*

Best Paper Award (poster presentation)

Geological Society of Korea   *2021*

2nd Place Award in Geological Resource Data Utilization and AI Competition

Korea Institute of Geoscience and Mineral Resources   *2021*

Presidential Science Scholarship

Korea Student Aid Foundation   *2014-2016,2019*

Skills

Seismological analysis

Rupture process analysis, Focal mechanism, EGF analysis, Slip inversion, Stress inversion, Back-projection, Microseismicity detection and location, Waveform modeling, Distributed acoustic sensing, Receiver function

Expertise

INSTRUMENTS: Dense seismic array, Local and regional seismograms, DAS
METHODS: Inversion problem, Signal processing, Deep learning

Programming experience

Python, Matlab, Linux, Git

Language)

English, Korean (native)

Manuscripts in Preparation / Submitted

[2] **Han, S.**, Kim, Y, Kim, J., Nayak, A., Yin, F., & Ajo-Franklin, J. Fragmented rupture kinematics of a micro-earthquake in weak crust revealed by distributed acoustic sensing. *(in prep.)*

[1] **Han, S.** & Kim, Y. Determining Small Earthquake Focal Mechanisms Using 360° S-Wave Polarization: Insights from Dense Seismic Arrays. *(reviewed in Geophysical Journal International)*

Research Publications

[6] Seo, M.-S., Kim, W.-Y., **Han, S.**, Park, J. Y., & Kim, Y. (2025). Complex Multi-patch Rupture and Aftershock Characteristics of the 2024 Mw 4.2 Buan, Korea, Earthquake Sequence. *(accepted in Seismological Research Letters)*

[5] **Han, S.**, Kim, W. Y., Park, J. Y., Seo, M. S., & Kim, Y. (2024). **Rupture model of the 5 April 2024 Tewksbury, New Jersey, earthquake based on regional Lg-wave data**. *The Seismic Record, 4(3), 214-222.*

[4] **Han, S.**, Kim, W.-Y., Lim, H., Son, Y. O., Seo, M.-S., Park, J. Y., & Kim, Y. (2024). **Resolving multi-stage rupture process of the 2021 Mw 4.9 Offshore Jeju Island earthquake from relative source time functions.** *Geophysical Research Letters, 51(3), e2023GL106059.*

[3] Kim, W.-Y., Seo, M.-S., Park, J. Y., **Han, S.**, Son, Y. O., & Kim, Y. (2023). The 28 October 2022 Mw 3.8 Goesan earthquake sequence in central Korea: stress drop, aftershock triggering, and fault interaction. *Bulletin of the Seismological Society of America, 113(6), 2416-2431.*

[2] Kim, W.-Y., Park, J. Y., Seo, M.-S., Son, Y. O., Lim, H., **Han, S.**, & Kim, Y. (2022). The 14 December 2021 Mw 4.9 offshore Jeju Island, Korea, earthquake: Seismological observation of an intraplate earthquake provides insight into regional seismotectonics. *The Seismic Record, 2(2), 107-117.*

[1] Lim, H., Kim, Y., Kwon, K. B., Han, J., Ahn, B. S., Chai, G., ... & Ree, J. H. (2021). Deployment of the linear array with geophones on the fault zone of the 2016 Mw 5.5 Gyeongju earthquake. *Journal of the Geological Society of Korea, 57(5), 741-746.*

Awarded conference presentation

[2] **Han, S.**& Kim, Y. (2025). Determining Small Earthquake Focal Mechanisms Using 360° S-Wave Polarization. In *SSA Annual Meeting. (*awarded)*

[1] **Han, S.**, & Kim, Y. (2021). Back-projection imaging of small earthquake ruptures using the data from Gyeongju High-Density Broadband Seismic Network. in *Joint Fall Meeting of Korean Geological Societies. (*awarded)*