

Haein Shin

Ph.D., Earth System Sciences, Yonsei University | Seoul, Republic of Korea | hishin@yonsei.ac.kr

EDUCATION

PH.D. | YONSEI UNIVERSITY

Sep 2019 – Aug 2025 | Earth System Sciences

- Advisor: Prof. Wonsuck Kim
- Thesis: Morphodynamics and Stratigraphic Records of Alluvial Fan associated with Upstream Boundary Conditions: Physical Experiments and Computational Modeling.

M.S. | CHUNGNAM NATIONAL UNIVERSITY

Mar 2014 – Feb 2016 | Astronomy, Space Science and Geology

- Advisor: Prof. Jaehyung Yu
- Thesis: Remote Sensing Approaches on Moisture Content Mapping for Coastal Sediments.

B.S. | CHUNGNAM NATIONAL UNIVERSITY

Mar 2010 – Feb 2014 | Geology and Earth Environmental Sciences

VISITING STUDENT | THE UNIVERSITY OF TEXAS AT AUSTIN

Sep 2022 – Feb 2023 | Department of Earth and Planetary Sciences, Jackson School of Geosciences

- Conducted collaborative research on *the infiltration process on an alluvial fan* with Prof. Joel Johnson

JOURNAL ARTICLES

PUBLICATIONS AS FIRST AUTHOR

- **Shin, H.**, Kim, W. (2025). Spatio-temporal variations on alluvial fan channel width under constant upstream boundary conditions. *Scientific Reports*. <https://doi.org/10.1038/s41598-025-94465-5>
- **Shin, H.**, Kim, W., Lee, H., Johnson, J., Paola, C. (2023). Fossilized autogenic responses of grain-size transition to sediment supply and water discharge. *Sedimentology*. <https://doi.org/10.1111/sed.13173>
- **Shin, H.**, Yu, J., Wang, L., Jeong, Y., Kim, J. (2020). Spectral interference of heavy metal contamination on spectral signals of moisture content for heavy metal contaminated soils. *IEEE Trans. Geosci. Remote Sens.* <https://doi.org/10.1109/TGRS.2019.2946297>
- **Shin, H.**, Yu, J., Jeong, Y., Wang, L., Yang, D. (2017). Case-based regression models for moisture content using SWIR reflectance. *IEEE J. Sel. Top. Appl. Earth Obs. Remote Sens.* <https://doi.org/10.1109/JSTARS.2017.2723912>
- **Shin, H.**, Yu, J., Kim, J., Yang, D., Lee, G. (2015). Mapping moisture content of coastal sediments using ASTER data. *Remote Sensing Letters*. <https://doi.org/10.1080/2150704X.2015.1049379>

PUBLICATIONS AS CO-AUTHOR

- Lee, H., Kim, W., Johnson, J., **Shin, H.**, Keum, D., Lee, Y., and Nahm, W. (2025). Experimental investigation of water and sediment discharge effects on alluvial fan margin roughness. *Journal of Sedimentary Research* 95(3).
- Kim, W., Lee, J., Lee, Y., Kim, M., and **Shin, H.** (2025). A coupled model for rift basin evolution: Interactions of tectonics, sea-level cycle, and sediment network. *Journal of Sedimentary Research* (in review).
- Kim, M., **Shin, H.**, Nahm, W., and Kim, W. (2023). Dynamic equilibrium position prediction model for the confluence area of Nakdong River. *Economic and Environmental Geology*, 56(4).

RESEARCH INTERESTS

SEDIMENTOLOGY

Fluvio-deltaic morphodynamics
Autogenic processes in stratigraphy
Physical experiments
Sediment transport modeling

REMOTE SENSING & GIS

Spectral characterization
Geospatial applications

SKILLS

Sediment Transport Modeling |
MATLAB
Geospatial Data analysis |
ArcGIS • ENVI
Statistical Analysis | R • SPSS
Spectral Analysis | Analytical Device
Labspec 5100 portable • XRD • XRF

TEACHING

Yonsei University

- Sedimentary Environments
- Sedimentary Petrology

Chungnam National University

- Resources Geology & Ore Deposit Geology
- Remote Sensing & GIS

AWARDS & HONORS

- Jeong Kwang-Ho Alumni Graduate Student Outstanding Paper Award, Yonsei University, 2024
- Best Oral Presentation Award, Korean Society of Economic and Environmental Geology, 2023
- Best Poster Presentation Award, Korea Association for Quaternary Research, 2017
- Best Oral Presentation Award, Korean Society of Economic and Environmental Geology, 2016

FUNDING &

FELLOWSHIPS

- NRF-USA Research Grant, 2022–2023
- POSCO Industry-Academic Scholarship, 2021