Hyoseob Noh

Curriculum Vitae

Department of Civil and Environmental Engineering
Seoul National University
✉ *hyoddubi@naver.com*
⌂ *My Webpage*
○ *Github*   in *Linkedin*

Education

2019–2024 : **PhD, Civil and Environmental Engineering**, *Seoul National University*, Advisor: Prof. Park, Yong Sung.
Sediment Load Estimation Based on Optimized Parameters and Clusters with Hydro-acoustic Backscatter

2017–2019 : **Master of Engineering, Civil and Environmental Engineering**, *Seoul National University*, Advisor: Prof. Seo, Il Won.
Development of Empirical Equations and Estimation Method of Transient Storage Model Parameters for Solute Transport in Rivers

2011–2017 : **Bachelor of Engineering, Civil Engineering**, *University of Seoul*.

Publications

In Review

(under review) Minjae Lee, Yong Sung Park, **Noh, Hyoseob**, Byunguk Kim, and Seoungjun Baek. Estimation of roughness height on oyster reefs. ***Journal of Geophysical Research: Oceans***, (under review).

(submitted) Siyoon Kwon, **Noh, Hyoseob**, Il Won Seo, and Yun Ho Lee. Cctv-hyperspectral imaging for suspended sediment transport (hisst): A continuous day-and-night monitoring approach. ***Water Resources Research***, (submitted).

(in print) **Noh, Hyoseob**, Il Won Seo, and Yong Sung Park. Assessment of bedload empirical equation applicability based on recent bedload meta-analysis data. ***Journal of Korean Water Resources Association***, (in print).

Journal Articles

2025 Byunguk Kim, Yong Sung Park, **Noh, Hyoseob**, and Minjae Lee. Improving accuracy of image-based depth inversion with an adaptive window optimization. *Coastal Engineering Journal*, volume 0, pages 1–13. Taylor & Francis, 2025, **(Impact Factor:1.9 (2023))**, doi:https://doi.org/10.1080/21664250.2025.2469957.

2024 **Noh, Hyoseob**, Geunsoo Son, Dongsu Kim, and Yong Sung Park. H-adcp-based real-time sediment load monitoring system using support vector regression calibrated by global optimization technique and its applications. ***Advances in Water Resources***, volume 185, page 104636, 2024, **(Impact Factor:4.7 (2022))**, doi:https://doi.org/10.1016/j.advwatres.2024.104636.

2024 **Noh, Hyoseob**, Siyoon Kwon, Yong Sung Park, and Seung-Buhm Woo. Application of rgb uav imagery to sea surface suspended sediment concentration monitoring in coastal construction site. ***Applied Ocean Research***, volume 145, page 103940, 2024, **(Impact Factor:4.3 (2023))**, doi:https://doi.org/10.1016/j.apor.2024.103940.

2023 **Noh, Hyoseob**, Yong Sung Park, and Il Won Seo. A novel efficient method of estimating suspended-to-total sediment load fraction in natural rivers. ***Water Resources Research***, volume 59, page e2022WR034401, 2023, **(Impact Factor:5.4 (2022))**, doi:https://doi.org/10.1029/2022WR034401.

2023 Siyoon Kwon, **Noh, Hyoseob**, Il Won Seo, and Yong Sung Park. Effects of spectral variability due to sediment and bottom characteristics on remote sensing for suspended sediment in shallow rivers. *Science of The Total Environment*, volume 878, page 163125. Elsevier, 2023, **(Impact Factor:10.753 (2021))**, doi:https://doi.org/10.1016/j.scitotenv.2023.163125.

2023 Byunguk Kim, **Noh, Hyoseob**, Yong Sung Park, and Minjae Lee. Non-spectral linear depth inversion using drone-acquired wave field imagery. *Applied Ocean Research*, volume 138, page 103625, 2023, **(Impact Factor:4.3 (2023))**, doi:https://doi.org/10.1016/j.apor.2023.103625.

2022 Siyoon Kwon, Jaehyun Shin, Il Won Seo, **Noh, Hyoseob**, Sung Hyun Jung, and Hojun You. Measurement of suspended sediment concentration in open channel flows based on hyperspectral imagery from uavs. *Advances in Water Resources*, volume 159, page 104076. Elsevier, 2022, **(Impact Factor:5.361 (2021))**, doi:https://doi.org/10.1016/j.advwatres.2021.104076.

2022 Siyoon Kwon, Il Won Seo, **Noh, Hyoseob**, and Byunguk Kim. Hyperspectral retrievals of suspended sediment using cluster-based machine learning regression in shallow waters. *Science of The Total Environment*, volume 833, page 155168. Elsevier, 2022, **(Impact Factor:10.753 (2021))**, doi:https://doi.org/10.1016/j.scitotenv.2022.155168.

2022 Byunguk Kim, Siyoon Kwon, **Noh, Hyoseob**, and Il Won Seo. Surrogate prediction of the breakthrough curve of solute transport in rivers using its reach length dependence. *Journal of Contaminant Hydrology*, page 104024. Elsevier, 2022, **(Impact Factor:4.184 (2021))**, doi:https://doi.org/10.1016/j.jconhyd.2022.104024.

2021 **Noh, Hyoseob**, Yong Sung Park, and Minjae Lee. Regional classification of total suspended matter in coastal areas of south korea. *Estuarine, Coastal and Shelf Science*, volume 254, page 107339. Elsevier, 2021, **(Impact Factor:3.229 (2021))**, doi:https://doi.org/10.1016/j.ecss.2021.107339.

2021 Siyoon Kwon, **Noh, Hyoseob**, Il Won Seo, Sung Hyun Jung, and Donghae Baek. Identification framework of contaminant spill in rivers using machine learning with breakthrough curve analysis. *International Journal of Environmental Research and Public Health*, volume 18, page 1023. MDPI, 2021, **(Impact Factor:4.614 (2021))**, doi:https://doi.org/10.3390/ijerph18031023.

2020 **Noh, Hyoseob**, Siyoon Kwon, Il Won Seo, Donghae Baek, and Sung Hyun Jung. Multi-gene genetic programming regression model for prediction of transient storage model parameters in natural rivers. *Water*, volume 13, page 76. MDPI, 2020, **(Impact Factor:3.530 (2021))**, doi:https://doi.org/10.3390/w13010076.

KCI Journal Articles

2025 **Noh, Hyoseob**, Byunguk Kim, Yong Sung Park, and Minjae Lee. Enhancing efficiency while maintaining accuracy in repeated coastal drone monitoring through the use of fixed structures as ground control points. *Journal of Korean Society of Coastal and Ocean Engineers*, volume 37, pages 1–14. Korean Society of Coastal and Ocean Engineers, 2025, doi:https://doi.org/10.9765/KSCOE.2025.37.1.1.

2024 Byunguk Kim, **Noh, Hyoseob**, jun Song Kim, and Il Won Seo. A review of transient storage modeling for analyzing one-dimensional non-fickian solute transport in rivers. journal of korea water resources association. *Journal of Korea Water Resources Association*, volume 57, pages 263–276. Korea Water Resources Association, 2024, doi:https://doi.org/10.3741/JKWRA.2024.57.4.263.

2023 **Noh, Hyoseob**, GeunSoo Son, Dongsu Kim, and Yong Sung Park. A svr based-pseudo modified einstein procedure incorporating h-adcp model for real-time total sediment discharge monitoring. *KSCE Journal of Civil and Environmental Engineering Research*, volume 43, pages 321–335. Korean Society of Civil Engineers, 2023, doi:https://doi.org/10.12652/Ksce.2023.43.3.0321.

2023 **Noh, Hyoseob**, Byunguk Kim, Minjae Lee, Yong Sung Park, Ki Young Bang, and Hojun Yoo. Survey of coastal topography using images from a single uav. *Journal of Korea Water Resources Association*, volume 56. Korea Water Resources Association, 2023, doi:https://doi.org/10.3741/JKWRA.2023.56.S-1.1027.

2022 **Noh, Hyoseob**, GeunSoo Son, Dongsu Kim, and Yong Sung Park. Clustering of sediment characteristics in south korean rivers and its expanded application strategy to h-adcp based suspended sediment concentration monitoring technique. ***Journal of Korea Water Resources Association***, volume 55, pages 43–57. Korea Water Resources Association, 2022, doi:https://doi.org/10.3741/JKWRA.2022.55.1.43.

2021 **Noh, Hyoseob** and Yong Sung Park. Identification of shear layer at river confluence using (rgb) aerial imagery. ***Journal of Korea Water Resources Association***, volume 54, pages 553–566. Korea Water Resources Association, 2021, doi:https://doi.org/10.3741/JKWRA.2021.54.8.553.

2019 **Noh, Hyoseob**, Donghae Baek, and Il Won Seo. Analysis of the applicability of parameter estimation methods for a transient storage model. ***Journal of Korea Water Resources Association***, volume 52, pages 681–695. Korea Water Resources Association, 2019, doi:https://doi.org/10.3741/JKWRA.2019.52.10.681.

In Conference Proceedings

2023 **Noh, Hyoseob**, Gensoo Son, Dongsu Kim, and Yong Sung Park. Importance of bedload sediment supply in the riverine sediment supply revealed from a real-time total load monitoring using horizontal-adcp and the support vector regression. In *The Proceedings of the Coastal Sediments 2023 In 5 Volumes*, pages 1801–1808. World Scientific, 2023. Coastal Sediments 2023, New Orleans, LA, USA, 11 – 15 April 2023.

2021 **Noh, Hyoseob** and Yong Sung Park. Confluence shear layer feature extraction method using rgb aerial imagery. In *Proceedings of the Korea Water Resources Association Conference*, pages 277–277. Korea Water Resources Association, 2021.

2020 **Noh, Hyoseob**, Yong Sung Park, and Minjae Lee. Coastal area classification using total suspended matter concentration. In *1st IAHR Young Professionals Congress*, pages 108–109. International Association for Hydro-Environment Engineering and Research, 2020. The 1st IAHR Young Professionals Congress 17-18 November 2020.

2020 Siyoon Kwon, Il Won Seo, and **Noh, Hyoseob**. Identification of contaminant source using truncated breakthrough curves in rivers. In *1st IAHR Young Professionals Congress*, pages 40–41. International Association for Hydro-Environment Engineering and Research, 2020. The 1st IAHR Young Professionals Congress 17-18 November 2020.

2019 Siyoon Kwon, Il Won Seo, and **Noh, Hyoseob**. Characterizations of the breakthrough curve to identify pollution sources with storage zone effect in natural streams. In *E-proceedings of the 38th IAHR World Congress*, pages 161–166. International Association for Hydro-Environment Engineering and Research, 2019. The 38th IAHR World Congress September 1-6, 2019, Panama City, Panama.

2018 Jaehyun Shin, Il Won Seo, and **Noh, Hyoseob**. Two-dimensional flow analysis model incorporating secondary current effects in meandering channels. In *Proceedings of the Korea Water Resources Association Conference*, pages 140–140. Korea Water Resources Association, 2018.

Work Experience

Seoul National University

June, 2024 – present ***Research Assistant Professor***.
Developing South Korean littoral cell boundary, UAV-based coastal process monitoring method, and total sediment load estimation models
PI : **Prof. Yong Sung Park** and **Prof. Il Won Seo**

March, 2024 – May, 2024 ***Postdoctoral Researcher***.
Developing South Korean littoral cell boundary, UAV-based coastal process monitoring method, and total sediment load estimation models
PI : **Prof. Yong Sung Park** and **Prof. Il Won Seo**

Fellowships & Awards

Fellowships

2024-2029   (**National Research Foundation of Korea (NRF)**), **Sejong Science Fellowship (5 years, KWR 600,000,000)**

Project :   Development of a River Hydraulics-Based Sediment and Bed level Change Analysis Framework through Optimization of Multi-source Data

Awards

2025   The Korea Water Resources Association (**KWRA**) 2024 **Dissertation Award**

2022   The Korean Association of Ocean Science and Technology Societies (**KAOSTS**) 2022 **Future Marine Science and Technology Award**

2022   The Korean Association of Ocean Science and Technology Societies (**KAOSTS**) 2021 **Academic Presentation Excellent Paper Award**

2020   Seoul National University Smart City Competition Encouragement Prize

Patents

Korea Patent

3   Yong Sung Park, and **Noh, Hyoseob**. Device and method for simultaneous determination of optimal input variables and hyperparameters of support vector regression. Korea Patent, filed December 06, 2024 (10-2024-0180918).; 서포트 벡터 회귀의 최적 입력변수 및 초매개변수 동시 결정 장치 및 방법

2   Yong Sung Park, **Noh, Hyoseob**, and Il Won Seo. METHOD AND APPARATUS FOR AN-ALYZING RIVER CONFLUENCE SHAER LAYER USING RGB IMAGES. Korea Patent, filed January 25, 2022 (10-2022-0010628), issued May 5, 2024 (10-2665566-0000).; RGB 영상을 이용한 하천의 합류부 전단층 해석 장치 및 방법

1   Il Won Seo, ByungukKim, Siyoon Kwon, and **Noh, Hyoseob**. Method and Device for Predicting Time-Concentration Curves using Its Reach-Length Dependence. Korea Patent, filed October 7, 2022 (10-2022-0129022), issued December 12, 2023 (10-2614520-0000).; 유하거리-농도곡선 상관성 기반 물질혼합 예측 방법 및 장치

Computer programming libraries

pyGOSH   Python library for Global Optmization and SHallow machine learning. URL: `https://github.com/hyoddubi1/pyGOSH`; doi: `https://doi.org/10.5281/zenodo.8198535`

Fsus-models   Python scripts of the derived Fsus estimation models from "A novel efficient method of estimating suspended total1 sediment load fraction in natural rivers" URL: `https://github.com/hyoddubi1/Fsus-sediment-fraction-models`; doi: `https://doi.org/10.5281/zenodo.7707130`

Skills

Programming Languages   Python, PyTorch, MatLab, C++

Languages   Korean, English

Instruments   ADCPs and ADVs (Sontek, Nortek), RTK-GPS (Sokkia GRX2), LISST-200X, Sediment Samplers (Suspended, bedload, bed material), Drones (DJI Mavic 2 Pro, DJI Phantom 4 RTK, DJI M600), hyperspectral camera (Corning SHARK 410)