Yonghun Suh

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EDUCATION

University of Georgia, Athens, GA, USA

Ph.D. Student in Geography — Aug 2026 – Present

- Advisor: Prof. Weiming Hu

Seoul National University, Seoul, South Korea

M.A. in Geography — Sep 2021 – Feb 2024

- Master's Thesis: "Real-time Landslide Susceptibility Monitoring Using Spatio-temporal High-resolution Active Remote Sensing Data: An Interpretable Machine Learning Approach"
- Adviser: Dr. Gunhak Lee
- GPA: 4.18 / 4.30

Kongju National University, South Chungcheong Province, South Korea

B.A. in Geography and B.Sc. in Atmospheric Science — Mar 2015 – Aug 2021

- GPA: 3.81 / 4.50

RESEARCH INTERESTS

GIScience; GeoAI and spatial machine learning; remote sensing; interpretable modeling; scalable geospatial computation.

Application areas: environmental hazards, weather and climate, agriculture, and humanitarian spatial analysis.

PUBLICATIONS

PEER-REVIEWED JOURNAL ARTICLES

[4] Yoo, E., et al. (2026). Hourly population movement and static-to-dynamic PM2.5 exposure discrepancies in Seoul, South Korea. *Environmental Pollution*, in press. doi:10.1016/j.envpol.2026.129480

[3] Yoo, E., Roberts, J., & **Suh, Y.** (2024). Delayed effects of air pollution on public bike-sharing system use in Seoul, South Korea: A time series analysis. *Social Science & Medicine*, 352, 117030. doi:10.1016/j.socscimed.2024.117030

[2] **Suh, Y.** & Lee, G. (2024). Predicting Landslide Susceptibility Using High-resolution Active Remote Sensing Data: An Interpretable Machine Learning Approach. *Journal of the Korean Cartographic Association*, 24(2), 89–111. [In Korean; English abstract]. doi:10.16879/jkca.2024.24.2.089

[1] **Suh, Y.** & Lee, G. (2023). Estimation of the de Facto Population at the Building Scale Using a Dasymetric Mapping Method Based on GWR. *Journal of the Korean Cartographic Association*, 23(1), 21–34. [In Korean; English abstract]. doi:10.16879/jkca.2023.23.1.021

PREPRINTS

[1] Ahn, K.[†], **Suh, Y.**[†], Han, S., Yang, J., Taubenböck, H., & Cha, M. (2025). Semi-supervised Shelter Mapping for WASH Accessibility Assessment in Rohingya Refugee Camps. Preprint (revised March 2026). arXiv:2511.07231. [†]Equal first-author contribution.

RESEARCH EXPERIENCE

Department of Geography, University of Georgia, Athens, GA, USA

Graduate Research Assistant — Aug 2026 – Present

- Contributing computational workflows to research on subseasonal-to-seasonal atmospheric-river forecasting.

- Developed reproducible Slurm-based HPC workflows for GraphCast Operational weather forecasts (GitHub: YONGHUNI/s2s-ar-forecasting).
- Faculty advisor: Prof. Weiming Hu.

Data Science for Humanity, Max Planck Institute for Security and Privacy (MPI-SP), Bochum, Germany

Research Intern May 2025 – Jul 2026

- Applied satellite imagery and deep learning to map shelters in Rohingya refugee settlements for WASH accessibility assessment; supported multi-city urban satellite-image processing
- Co-first-authored an arXiv preprint on semi-supervised shelter mapping and WASH accessibility (Publications, Preprints [1])
- PI: Prof. Meeyoung Cha (MPI-SP & Korea Advanced Institute of Science and Technology)

UB Clean Air, University at Buffalo, the State University of New York (SUNY), NY, USA

Project Consultant Sep 2024 – Present

A community-based air quality monitoring project funded by the Environmental Protection Agency

- Contribute to data collection strategies, spatiotemporal visualization, and modeling workflows
- Developed interactive dashboards for community-based participatory air monitoring and research dissemination (Conference Presentations [5])
- PI: Prof. Eunhye Yoo (SUNY)

Brain Korea Research Team for the Future Landscape, Seoul National University (SNU), Seoul, South Korea

Graduate Student Researcher Sep 2021 – Aug 2023

- Developed spatial modeling workflows for building-scale population estimation and landslide susceptibility analysis
- Modeled landslide susceptibility using InSAR displacement, weather radar rainfall estimates, and interpretable machine learning (Publications, Peer-Reviewed Journal Articles [2])
- Estimated building-scale de facto population in Seoul using dasymetric mapping and geographically weighted regression (Publications, Peer-Reviewed Journal Articles [1])

Development of the Method for Detecting Spatial Interactive Flow Clusters and Its Applicability, SNU, Seoul, South Korea

Graduate Student Researcher Aug 2021 – Jun 2022

- Reviewed spatial, network, and vector autocorrelation methods for analyzing spatial dependence in interaction data.
- PI: Prof. Gunhak Lee (SNU)

Korea Environment Institute (KEI), Sejong, South Korea

Research Intern Sep 2020 – Dec 2020

- Processed Sentinel-2 imagery and climate datasets to support research projects on the North Korean environment
- Assisted Dr. Soojeong Myeong, a Chief Research Fellow, Water and Land Research Group, KEI

CONFERENCE PRESENTATIONS

[5] **Suh, Y.** & Yoo, E. (2025). From Data to Dissemination: Creating Dashboards for Buffalo African-American Community-based Participatory Air Monitoring. *Joint Annual Meeting of the International Society of Exposure Science and the International Society for Environmental Epidemiology 2025 (ISES-ISEE 2025)*, Atlanta, USA, Aug. 17–20. (Poster, Abstract)

[4] Yoo, E., Lee, J., & **Suh, Y.** (2025). Enhancing Community Air Quality Monitoring: A Spatiotemporal PM2.5 Modeling Approach Using Multiple Data Sources. *Joint Annual Meeting of the International Society of Exposure Science and the International Society for Environmental Epidemiology 2025 (ISES-ISEE 2025)*, Atlanta, USA, Aug. 17–20. (Abstract)

[3] Yoo, E., Roberts, J., & **Suh, Y.** (2024). Delayed effects of air pollution on public bike-sharing system use in Seoul, South Korea: A time series analysis. *2024 Spring Conference of Korean Society of Environmental Health*, Gangwon Province, South Korea, May 29–31.

[2] **Suh, Y.** & Lee, G. (2023). An alternative approach for the landslide prediction using an interpretable machine learning method. *2023 American Association of Geographers Annual Meeting (2023 AAG)*, Denver, USA, Mar. 23–27.

[1] **Suh, Y.** & Lee, G. (2022). Estimation of building-scale population density by using a dasymetric-based interpolation method: A case study of Seoul metropolitan area. *2022 American Association of Geographers Annual Meeting (2022 AAG)*, Virtual, Feb. 25 – Mar. 1.

IN KOREAN

[4] **Suh, Y.** & Lee, G. (2024). Real-time Landslide Susceptibility Monitoring Using Spatio-temporal High-resolution Active Remote Sensing Data: An Interpretable Machine Learning Approach. *2024 Annual Conference of the Korean Geographical Society*, Seoul, South Korea, Jun. 27–28.

[3] **Suh, Y.**, Bae, S., & Jeong, S. (2022). Accessibility Analysis of Public Cooling Shelters in Seoul Considering Local Temperature: Focusing on the Elderly Population. *2022 Annual Conference of the Korean Geographical Society*, Seoul, South Korea, Jun. 24–25. (Poster)

[2] **Suh, Y.** & Lee, G. (2022). Estimation of the de Facto Population at the Building Scale Using a Dasymetric Mapping Method Based on GWR. *2022 The Korean Cartographic Association Spring Conference*, Seoul, South Korea, Jun. 11.

[1] Myeong, S. & **Suh, Y.** (2020). Pre-flood and post-flood damage analysis in the Imjin River Basin. *2020 Korean Society of Remote Sensing Fall Conference*, Virtual, Nov. 4–6. (Poster)

TEACHING EXPERIENCE

Spatial Analytics 3: Spatio-temporal Data Science, SNU, Seoul, South Korea

Teaching Assistant Spring 2023

- Provided the entire lab session material using R Markdown and GitHub actions
- Instructor: Prof. Em. Key-Ho Park (SNU)

Spatial Analytics 2: Machine Learning, SNU, Seoul, South Korea

Teaching Assistant Fall 2022

- Conducted TA lab sessions on machine learning algorithms using R
- Instructor: Prof. Em. Key-Ho Park (SNU)

Computer Cartography, SNU, Seoul, South Korea

Teaching Assistant Fall 2021

- Conducted TA lab sessions on cartography & spatial analytics using ArcGIS and R
- Instructor: Prof. Gunhak Lee (SNU)

WORK EXPERIENCE

Office of Information & Computing Center, College of Engineering (CoE), SNU, Seoul, South Korea

System Administrator Jul 2024 – Mar 2025

- **Role**: Managed 2 GPU clusters with multiple nodes (A100 – 4 nodes, GTX 1080 – 100 nodes) for computation demand of 400+ users in CoE, SNU
- Supported *2024 SNU Fast MRI Challenge* as a role of MLOps

The Third Topography Analysis Team, Third Republic of Korea Army, Gyeonggi Province, South Korea

Imagery Analysis Specialist Jul 2017 – Apr 2019

- **Role**: Provided crucial terrain information to assist commanders in decision-making
- Conducted topographical analysis & provided information through paper and digital maps using ArcGIS and TerraExplorer.
- Fulfilled mandatory enlisted military service; led the enlisted members of the team as Squad Leader and discharged as Sergeant

AWARDS & SCHOLARSHIPS

- Future Vision Scholarship, SNU — Feb 2023
  - Received the Scholarship from SNU for outstanding academic performance and exemplary conduct.
- Best Poster Award in Student Poster Competition, Korean Geographical Society (KGS) — Jun 2022
  - 2022 Annual Conference of the KGS
- Outstanding Service Award, SNU — Feb 2022
  - Awarded by the Brain Korea Research Team for the Future Landscape at SNU for significant contributions to the department.
- Talent Development Scholarship, Jeju International Scholarship Foundation (JISF) — May 2016
  - Awarded by JISF for outstanding academic performance
- The Kongju National University Alumni Association Scholarship — Nov 2015

TECHNICAL SKILLS

- Geospatial & Remote Sensing
  - Experienced with: **ArcGIS** variants, **QGIS**, **Google Earth Engine**
  - Working knowledge: **ERDAS IMAGINE**, **HyP3 (ASF)**
- Spatial Modeling & Programming
  - Advanced: **R**
  - Intermediate: **Bash**, **Fortran**, **Python**
  - Working knowledge: **Julia**, **C++**, **CUDA**
- Research Computing & HPC
  - Experience with Slurm-managed HPC environments, Linux servers, and GPU clusters
  - Tools: Slurm, Ansible, Kubernetes, Metal as a Service (MaaS)
- Reproducibility & Publishing
  - Git, Nix (flakes), LaTeX, Quarto, R Markdown, GitHub Actions

OTHER EXPERIENCE

Bacchus – System Administrator Club, Dept. of Computer Science and Engineering, SNU, Seoul, South Korea

Club Member — Mar 2024 – Apr 2025

- Set up and maintained Debian package caching servers using Caddy and Reprepro on a Kubernetes cluster
- Migrated the club's manual webpage from Cloudflare's hosting service to the on-premise server

2024 Accelerator Programming Winter School, SNU, Gyeonggi Province, South Korea

Participant — Feb 2024

- An intensive course covering CUDA programming.
- Conducted a team project optimizing the inference performance of the GRU model by porting CPU code to GPU kernels.

Server Management, Dept. of Geography, SNU, Seoul, South Korea

System Administrator — Nov 2022 – Feb 2024

- Set up a Windows HPC server that includes WSL to help more students utilize the resource.

ACADEMIC SERVICE

Graduate Student Council, Dept. of Geography, SNU, Seoul, South Korea

Treasurer of the Council — Sep 2022 – Aug 2023

- Coordinated departmental events and managed a graduate field trip

Journal of the Korean Cartographic Association, Seoul, South Korea

Editorial Assistant — Jan 2022 – Dec 2022

- **Role**: Managed submissions, reviews, and proofreading processes.
- Contributed to the editorial activities for three volumes of the journal.

[*Last updated: November 2026*]