Yonghun Suh

Curriculum Vitae
Data Science for Humanity Group
Max Planck Institute for Security and Privacy
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RESEARCH INTEREST

GIScience, Machine Learning, High Performance Computing, Active Remote Sensing, Spatial Data Analysis

SKILLS

- Programming Languages
  - Expert: **R**
  - Intermediate: **Bash**, **Fortran**, **Python**
  - Working knowledge: **Julia**, **C++**, **CUDA**
- GIS Software: **ArcGIS** Variants, **QGIS**
- Remote Sensing Software/Platform: **Erdas Imagine**, **Google Earth Engine**, **HyP3 (ASF)**
- Others
  - Experience in configuring, maintaining, and monitoring Linux servers
  - Ansible, Git, Kubernetes, LaTeX, Metal as a Service(MaaS), Quarto

EDUCATION

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
- Cumulative GPA: 4.18 / 4.3

Kongju National University, South Chungcheong Province, South Korea

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

- Cumulative GPA: 3.81 / 4.50

PUBLICATIONS

IN ENGLISH

[2] (Under review) Ahn, K.[†], **Suh, Y.**[†], Han, S., Yang, J., Taubenböck, H., & Cha, M. (2025). Mapping Reduced Accessibility to WASH Facilities in Rohingya Refugee Camps with Sub-Meter Imagery. [Preprint]. *arXiv:2511.07231 [cs.CV]*. [†]Contributed equally as first authors.

[1] 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. (Q1 journal)

IN KOREAN

[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.

[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.

CONFERENCE PRESENTATION

IN ENGLISH

[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)

RESEARCH EXPERIENCE

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

Research Intern May 2025 – Present

A research internship at a publicly funded research initiative applying data science to real-world humanitarian challenges

- **Role**: Participating in a project to detect slum areas within Rohingya refugee settlements using satellite imagery and deep learning
- 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, United States

Project Consultant Sep 2024 – Present

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

- **Role**: Contribute to the development of data collection strategies, visualization, and modeling
- 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

A research team focused on fostering next-generation strategic spatial experts

- **Role**: Conducted research on de-facto population and landslide susceptibility
- Conducted research on landslide susceptibility utilizing interferometric SAR and machine learning

- Conducted research on de-facto population utilizing fine-scale population data of Seoul

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

Graduate Student Researcher Aug 2021 – Jun 2021

A research project for developing scientific analysis methods to detect the pattern of complex spatial interactions

- **Role**: Conducted literature review on spatial, network, and vector autocorrelation to analyze spatial autocorrelation in spatial interaction data systematically.
- PI: Prof. Gunhak Lee (SNU)

Korea Environment Institute (KEI), Sejong Self-Governing City, Korea

Research Intern Sep 2020 – Dec 2020

A research internship opportunity for undergraduate students

- **Role**: Conducted Sentinel-2 data processing and climate analysis to support research projects on the North Korean environment
- Assisted Dr. Soojeong Myeong, a Chief Research Fellow, Water and Land Research Group, KEI

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, GTX1080 - 100 nodes) for computation demand of 5,000+ users in CoE, SNU
- Supported *2024 SNU Fast MRI Challenge* as a role of MLOps

Journal of the Korea 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.

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

Imagery Analysis Specialist Aug 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.

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)

OTHER EXPERIENCE

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

Club Member Mar 2024 – Apr 2025

- Engaged in environment setup for managing Debian package caching servers using Caddy (webserver) and Reprepro (Debian package repository manager) in a Kubernetes (container orchestration tool) setup.
- Migrated the club's manual webpage from Cloudflares 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, Korea

System Administrator Nov 2022 – Feb 2024

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

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

SERVICES

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

Treasurer of the Council Sep 2022 – Aug 2023

- Coordinated departmental events and managed a graduate field trip

Republic of Korea Army, Korea

Enlisted Military Service for the Republic of Korea Jul 2017 – Apr 2019

- Rank at Discharge: Sergeant
- Squad Leader: Led the enlisted members of the Topography Analysis Team, coordinated training exercises, and ensured mission success through effective leadership and team management.

[*CV compiled on November 2025*]