

# 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

**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

- [1] Eun-Hye Yoo, John E. Roberts, & **Yonghun Suh** (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] **Yonghun Suh** & Gunhak Lee (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] **Yonghun Suh** & Gunhak Lee (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] **Yonghun Suh** & Eun-Hye Yoo, 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, 2025. (Poster, Abstract)

- [4] Eun-Hye Yoo, Jeongwon Lee, & **Yonghun Suh**, 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, 2025. (Abstract)
- [3] Eun-Hye Yoo, John E. Roberts, & **Yonghun Suh**, 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, 2024.
- [2] **Yonghun Suh** & Gunhak Lee, 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, 2023.
- [1] **Yonghun Suh** & Gunhak Lee, 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, 2022.

#### IN KOREAN

- [4] **Yonghun Suh** & Gunhak Lee, 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, 2024.
- [3] **Yonghun Suh**, Seong-Yun Bae & Song-Hee Jeong, 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, 2022. (Poster)
- [2] **Yonghun Suh** & Gunhak Lee, 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, 2022.
- [1] Soojeong Myeong & **Yonghun Suh**, Pre-flood and post-flood damage analysis in the Imjin River Basin, *2020 Korean Society of Remote Sensing Fall Conference*, Virtual, Nov. 4–6, 2020. (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

	<i>Participant</i>	Feb 2024
	<ul style="list-style-type: none"> <li>• An intensive course covering CUDA programming.</li> <li>• Conducted a team project optimizing the inference performance of the GRU model by porting CPU code to GPU kernels.</li> </ul>	
	<b>Server Management</b> , Dept. of Geography, SNU, Seoul, Korea	
	<i>System Administrator</i>	Nov 2022 – Feb 2024
	<ul style="list-style-type: none"> <li>• Set up a Windows HPC server that includes WSL to help more students utilize the resource.</li> </ul>	
<b>AWARDS &amp; SCHOLARSHIPS</b>	<ul style="list-style-type: none"> <li>▪ Future Vision Scholarship, SNU</li> </ul>	Feb 2023
	<ul style="list-style-type: none"> <li>• Received the Scholarship from SNU for outstanding academic performance and exemplary conduct.</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Best Poster Award in Student Poster Competition, Korean Geographical Society (KGS)</li> </ul>	Jun 2022
	<ul style="list-style-type: none"> <li>• 2022 Annual Conference of the KGS</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Outstanding Service Award, SNU</li> </ul>	Feb 2022
	<ul style="list-style-type: none"> <li>• Awarded by the Brain Korea Research Team for the Future Landscape at SNU for significant contributions to the department.</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Talent Development Scholarship, Jeju International Scholarship Foundation (JISF)</li> </ul>	May 2016
	<ul style="list-style-type: none"> <li>• Awarded by JISF for outstanding academic performance</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ The Kongju National University Alumni Association Scholarship</li> </ul>	Nov 2015
<b>SERVICES</b>	<b>Graduate Student Council</b> , Dept. of Geography, SNU, Seoul, Korea	
	<i>Treasurer of the Council</i>	Sep 2022 – Aug 2023
	<ul style="list-style-type: none"> <li>• Coordinated departmental events and managed a graduate field trip</li> </ul>	
	<b>Republic of Korea Army</b> , Korea	
	<i>Enlisted Military Service for the Republic of Korea</i>	Jul 2017 – Apr 2019
		[Updated on Jul. 2025]