SANGHOON JI

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RESEARCH INTEREST

GIS/Geomatics, Urban Design, Remote Sensing, UAV, Ecosystem Services, 3D Spatial Modeling

EDUCATION

KYUNG HEE UNIVERSITY   Seoul, Korea
M.S. Program of Geography (GPA 4.38/4.5)   February 2023
Thesis: *A Study on Urban Disparities in Shared Bicycle Services Using Open Source Analysis Tools-A Case Study of Seoul Public Bike* (Advisor: Dr. Chul-Sue Hwang)

KYUNG HEE UNIVERSITY   Seoul, Korea
Bachelor of Tourism & Geography (Double Major, GPA 3.84/4.5)   February 2020

PUBLICATIONS

Ji, S., Kim, J. & Jo, J., (2025). Typology of Korean Mountain Villages via Self-Organizing Maps and Analysis of Temporal Change Patterns. *Journal of Korean Society of Forest Science*, Under review (2nd round)

Ji, S., Kim, S., Lee, J. & Seo, K. (2025). Quantitative Evaluation and Typology of Social Exposure Patterns to Urban Green Spaces: A Case Study of Seoul. *Forests,* 16(3), 510. https://doi.org/10.3390/f16030510

Choi, M., **Ji, S.**, Kim, H. & Jo, J. (2024). Mapping the Unseen: Integrating Hiking Activities into Spatially Explicit Cultural Ecosystem Service Assessment Through Agent-Based Modeling. *Transactions in GIS*, 29(1), e13285. https://doi.org/10.1111/tgis.13285

Ji, S. (2023). A Study on Urban Disparities in Shared Bicycle Services Using Open Source Analysis Tools: A Case Study of Seoul Public Bike. *Kyung Hee University.* 1-79. https://www.riss.kr/link?id=T16666806

Choi, M., Park, J. & **Ji, S.** (2022). Risk Assessments of Crowds at Bottlenecks through Agent Based Modelling. *Journal of the Korean Geographical Society*, 57(6), 595-609. https://doi.org/10.22776/kgs.2022.57.6.595

Ji, S., Hwang, H., Hwang, C., Koo, C. & Lee, E. (2022). The Attributes of Virtual Reality(VR) Experiences and Spatial Cognition among Tourists: Focusing on a Behavioral Geographic Perspective. *Journal of Tourism Sciences*, 46(4), 153-176. http://dx.doi.org/10.17086/JTS.2022.46.4.153.176

Ji, S., Seong, J., Stanescu, A., Hwang, C. & Lee, Y. (2021). Spatiotemporal Traffic Database Construction with Google Real-time Traffic Information and Congestion Pattern Analysis: A Case Study of Montgomery County, Maryland, USA, *Journal of the Korean Geographical Society*, 56(3), 265-276. https://doi.org/10.22776/kgs.2021.56.3.265

Lee, Y., Lee, Y., Seong, J., Stanescu, A., **Ji, S.** & Hwang, C. (2020). An Analysis of the latest Trends and Topics in Geography Research Using Topic Modeling. *Journal of the Korean Geographical Society*, 55(6), 589-599. https://doi.org/10.22776/kgs.2020.55.6.589

PRESENTATIONS

Kim, J., Nam, H., **Ji, S.** & Hwang, C. (2024). Construction of CityGML-Based 3D Digital Twin using UAV: A Case Study of Kyung Hee University, Seoul. In *Proceedings of the 2024 American Association of Geographers Annual Meeting*, April 2024, Honolulu, US. (Abstract)

Ji, S., Lee, J., Kim, J. & Nam, H. (2024). Assessing Spatial Accessibility in Forest Welfare for Enhanced Quality of Life. In *Proceedings of the 2024 American Association of Geographers Annual Meeting*, April 2024, Honolulu, US. (Abstract, Related Article)

Kang, J., Park, J., **Ji, S.**, Lee, J. & Seo, K. (2024). Modifiable Areal Unit Problem in Measuring Spatial Accessibility to Urban Green Space: The Case Study of Seoul. In *Proceedings of the 2024 Summer Conference of the Korean Society of Forest Science*, 2024 August, Jeju, Korea. (Abstract)

Park, J., Kang, J., **Ji, S.**, Lee, J. & Seo, K. (2024). Spatial clustering of 15-minute green space accessibility attributed to floating population: a case study of Seoul. In *Proceedings of the 2024 Summer Conference of the Korean Society of Forest Science*, 2024 August, Jeju, Korea. (Abstract)

Lee, J. & **Ji, S.** (2024). Improving Forest Welfare Services in Daily Living Areas to Enhance Quality of Life. In *Proceedings of the 2024 Annual Conference of the Korean Association for Forest Administration*, February 2024, Sejong, Korea. (Abstract, Related Article)

Choi, M., Jo, J., Kim, H. & **Ji, S.** (2023). Assessing cultural ecosystem services supply and demand using Agent-based modeling**.** *The International Symposium on Sustainable Forest Ecosystem Management*, August 2023, Seoul, Korea. (Presentation, Related Article)

Ji, S., Lee, S., Hwang, T. & Lee, W. (2022). Open source package for measuring geographic accessibility using the national standard traffic information network. In *Proceedings of International Conference of the Korean Society of Transportation*, September 2022, Seoul, Korea. (Abstract, Presentation, Related Article)

Hwang, T., Kim, K., **Ji, S.**, Hong, H., Cho, S. & Hwang, C. (2022). Spatiotemporal Pattern Typology and Variations in Shared Bicycle Usage in Seoul. In *Proceedings of the 2022 Annual Conference of the Korean Geographical Society*, June 2022, Seoul, Korea. (Abstract)

Kim, H., Cho, S., Hong, H., Jeong, S., Stanescu, A., Hwang C. & **Ji, S.** (2022). Traffic Big-data Analysis with Google Maps Spatio-temporal Database: Atlanta, Georgia, 2021. In *Proceedings of the 2022 American Association of Geographers Annual Meeting*, February 2022, Virtual meeting. (Abstract)

Hwang, T., Kim, K., Lee, Y., Kim, H., **Ji, S.** & Hwang, C. (2021). Comparative study on research trends of international geographic journals and Journal of the Korean Geographical Society 2001-2020. In *Proceedings of the 2021 Annual Conference of the Korean Geographical Society*, June 2021, Virtual Meeting. (Abstract)

Ji, S., Seong, J., Lee, Y., Stanescu, A., & Hwang, C. (2021). An Exploratory Spatial Pattern Analysis Using a Traffic Congestion Data-Mining Approach with an Online Map Service. In *Proceedings of the 2021 American Association of Geographers Annual Meeting*, April 2021, Virtual meeting. (Abstract, Presentation, Related Article)

Seong, J., **Ji, S.**, Stanescu, A., Lee, Y., & Hwang, C. (2021). What will be Presented at the 2021 AAG Meeting? *AAG Newsletter*, 55, April 2021. (Article, Related Article)

Lee, Y., Lee, Y., Seong, J., Stanescu, A., **Ji, S.** & Hwang, C. (2020). Topic Analysis of Papers from the 2018 to 2020 AAG Annual Meetings Using Topic Modeling. In *Proceedings of the 2020 Annual Conference of the Korean Geographical Society*, November 2020, Virtual Meeting. (Abstract, Related Article)

PRESENTATIONS - POSTERS

Ji, S., Lee, J. & Seo, K. (2024). Exploring Population Exposure Patterns to Urban Green Spaces Using the 2SFCA Methodology. In *Proceedings of the World Forum on Forest Therapy 2024*, 2024 October, Daejeon, Korea. (Abstract, Poster)

Ji, S., Lee, J. & Seo, K. (2024). Quantifying Urban Green Space Accessibility in Seoul: Applying the Gaussian 2-Step Floating Catchment Area(G2SFCA). In *Proceedings of the 2024 Summer Conference of the Korean Society of Forest Science* 2024 August, Jeju, Korea. (Abstract, Poster)

Kim, K., Lee, J., Seo, K. & **Ji, S.** (2023). Analyzing National Recreation Forest user complaints using Semantic Network analysis method. In *Proceedings of the 2023 Joint Conference of the Korean Society of Forest Science*, February 2024, Seoul, Korea. (Abstract, Poster)

Ji, S., Lee, E. & Hwang, H. (2022). Development of Immersive Virtual Reality from a Pedestrian Perspective Using UAV-SfM 3D Model. In *Proceedings of the 1st Kyung Hee University Graduate School Joint Academic Seminar*, January 2022, Seoul, Korea. (Abstract, Poster, Related Article) ISBN:979-11-977927-0-0.

Ji, S., Seong, J., Stanescu, A., Hwang, C. & Lee, Y. (2021). Exploratory Spatiotemporal Congestion Pattern Analysis Using Real-time Traffic Congestion Data Collection Method within Online Map Service: A Case Study of Seoul. In *Proceedings of the 2021 Annual Conference of the Korean Geographical Society*, June 2021, Virtual Meeting. (Abstract, Poster, Related Article)

Ji, S., Seong, J., Lee, Y., Stanescu, A., & Hwang, C. (2020). Rush Hour Crashes and Speeding Analysis with Traffic Big Data. In *Proceedings of the 33rd US-Korea Conference*, December 2020, Virtual meeting. (Abstract, Poster)

RESEARCH EXPERIENCE

Wonkwang University   Iksan, Korea
Research Assistant(Supervisor: Dr. Jang-Hwan Jo)   September 2025 – Present
      Project for Establishing the Master Plan for Mountain Village Revitalization
- Utilizing the National Mountain Village Survey Data: Factor Analysis and Temporal Variability Analysis

      Development of a K-Glocal Forest Biodiversity Informatization and Management Model: Establishing a TNFD-Based ESG Response Framework Linking Local and Global Dimensions

Korea Research Institute for Local Administration   Wonju, Korea
Research Assistant(Supervisor: Dr. Wondo Lee)   June 2025 – Present
      Analysis of the Daily Population Dynamics in Depopulating Areas
- Analyzed National De Facto Population by integrating national statistics (Statistics Korea) with credit card and mobile big data

      Research on Enhancing the Production and Service Utilization of Regional Statistics
- Advised on strategies to improve the utilization of national big data by local governments

Korea Forest Service   Seoul, Korea
Research Assistant(Supervisor: Dr. Jeonghee Lee)   December 2023 – September 2024
      Quality of Life–Based Framework for the Enhancement of Forest Ecosystem Services in Urban Areas
- Designed a GIS-based analytical framework to assess urban green space accessibility, incorporating mobile-based de facto population data and pedestrian-level network analysis in Seoul

      Establishment and Advancement of a Comprehensive Evaluation System for National Forest Trails
- Designed a framework for geospatial data collection and processing of Korea's first national forest trail database, establishing classification criteria and a metadata schema from scratch

University of West Georgia   Carrolton, Georgia, United States
Department of Geosciences, Visiting Scholar(Supervisor: Dr. Jeong Seong)   June 2020 - May 2022
> High-Potential Individuals Global Training Program
> - Funded by Institute for Information & communication Technology Planning & evaluation(IITP)
>
> Development of 3D Spatiotemporal Big Data Analysis Techniques Using Machine Learning
> - Designed and implemented a 3D spatiotemporal analysis methodology by integrating Google Maps with remote sensing–based techniques
> - Applied machine learning–based time-series analysis to detect and classify recurrent traffic congestion patterns
>
> Exploration of Trends in Geographic Big Data Research and Development of Integrated GIS Big Data Analysis
> - Conducted keyword analysis using machine learning and social network analysis methods

GIS Lab, Kyung Hee University   Seoul, Korea
Research Assistant(Supervisor: Dr. Chul-Sue Hwang)   June 2019 – February 2025
> LiDAR-Based CityGML Automation Framework: Building 3D Urban Models for Energy Simulations
> - Designed a processing framework to transform high-resolution LiDAR data into CityGML-compliant 3D urban models
> - Applied advanced algorithms to massive LiDAR point clouds for object detection (roof, wall, ground) and convert them into CityGML-compliant LoD3 geospatial models
>
> University Innovation Support Project – Digital Twin University Campus as a Digital Metaverse
> - Developed and implemented a UAV-based spatial analysis curriculum(GEOG4062), covering drone operation, 3D modeling, and spatial data processing
> - Funded by The Korea Ministry of Education, July 2022 - December 2024
>
> Policy Research and Analysis for Addressing Population Decline in the Region
> - Developed an open-sourced analysis tool for multimodal network analysis
> - Funded by The Korea Research Institute for Local Administration(KRILA), June - December 2022
>
> Evaluation of Potential Agricultural Productivity Through Time-Series Analysis of North Korean Farmland and Reclamation Areas
> - Developed methodologies for classification of satellite imagery to generate land cover maps
> - Funded by The Korean Geographical Society(KGS), May - November 2022
>
> Research on Spatial Information-Based Transportation Networks and Connectivity Systems in North Korean Region
> - Built GIS-ready transportation networks by integrating satellite imagery and geospatial data
> - Funded by The Korean Geographical Society(KGS), May - November 2020
>
> Spatial Data Collection for Estimating External Effects of Renewable Energy Generation Facilities
> - Directed the automation of large-scale spatial big data processing and analysis as Project Manager
> - Funded by The Korea Development Institute(KDI), April - September 2020
>
> Development of Web-GIS-based Antibiotic Resistance Map
> - Designed and implemented a PostGIS-based spatial database and developed a web mapping service
> - Funded by The Korea Environmental Industry and Technology Institute (KEITI), September 2019 - December 2020
>
> National Atlas of Korea Publication Project
> - Collected and processed spatial data required for map visualization
> - Funded by The Korean Geographical Society(KGS), July 2019 - January 2020
>
> Spatial Data Collection for Analyzing the Location Choices of New Service Providers Based on Transportation Infrastructure
> - Spatial data collection and processing
> - Funded by The Korea Development Institute(KDI), June - November 2019
>
> Development of a Methodology that Converges Land Information and AI to Realize Social Values
> - Designed and developed the living-lab webpage using HTML
> - Funded by Korea Land and Geospatial Informatix Corporation(LX), June - November 2019

WORK EXPERIENCE

Korean Geographical Society   Seoul, Korea
Lecturer   2024
  - Geospatial Analysis and Applications Training Program, December, 2024
  - Applications of Geographic Information Technologies, November, 2024

Kyung Hee University   Seoul, Korea
Teaching Assistant   June 2019 – February 2025
  <u>University of West Georgia Geospatial Workshop, June – August 2023</u>
  - Supervised and guided undergraduate students participating in international workshops
  <u>Applications of Geographic Information and Technology (GEOG4062), July 2022 – December 2024</u>
  - Spatial Big-data Competency Development Program, Funded by Spatial Information Industry Promotion Agency(SpaceN)
  - Designed a practical course on combining aerial imagery captured by drones with SfM (Structure from Motion) algorithms to create a 3D model of the university campus
  - Managed government-funded budgets for course implementation and introduced research equipment such as Pix4D, DJI Mavic 2 Pro, Meta Quest 2, and more.
  <u>Fieldworks in Human Geography(GEOG205301), September – December 2021</u>
  - Supervised undergraduate students' individual assignment • Designed field trip-related plans
  <u>Introduction to Geographic Information Systems and Science(GEOG201401), January 2020 – July 2021</u>
  - Created instructional <u>videos</u> for GIS practical courses
  - Supervised undergraduate students' individual research and managed their research outcomes.

Graduate Assistant   March 2020 – March 2022
  - Department of Geography, September 2021- March 2022
  - Kyung Hee University Communication & Press, March - August 2020

Korea Transport Institute   Sejong, Korea
Research Assistant / Intern   July – August 2018
  - Origin-Destination (OD) Network Analysis Team, National Transport Big Data Center

OTHER EXPERIENCES

- Mentee, the Korean Association of Geographic Information and Environmental Science (KAGES) Mentoring Program, Advisor: Dr. Taejin Park (NASA Ames Research Center), 2024
- Mentee, the Korean Association of Geographic Information and Environmental Science (KAGES) Mentoring Program, Advisor: Dr. Junghwan Kim (Virginia Tech), 2022
- Certification, <u>NASA's Applied Remote Sensing Training Program</u>: Using Google Earth Engine for Land Monitoring Applications
- Mentor, Kyung Hee University Brand Ambassador, 2019
- Curriculum for Teaching Profession, Subject: Tourism, Geography (Double Major in Education)
  ◦ Student teacher (Tourism/Geography Subject), Seoul Tourism High School, May 2019
  ◦ Pre-Teacher Training and Competency Enhancement Program, November 2017 – February 2018
- Military Training Instructor, Republic of Korea Air Force Basic Military Training Wing, 2014-2016
- Intern, Kyung Hee University Brand Ambassador, 2013-2014
- Intern, Seoul Foundation for Arts and Culture, 2013
- Student Association, Department of Culture and Tourism Contents, Kyung Hee University, 2013-2014

LANGUAGES

English: IELTS 7.5

SKILLS

Programming: Python, R, SAS, SQL, PostGIS, HTML, C#
Geospatial Tools: QGIS, ArcGIS, Anylogic,
3D/Simulation: Metashape, Pix4D, SketchUp, Unity, Trimble Realworks
Remote Sensing: UAV(DJI Mavic/Phantom/Avata Series, Parrot Anafi Thermal), Dronelink, Pix4D Capture, Google Earth Engine

Updated October 2025