

Donghwan Ki

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Education

Ph.D. in City and Regional Planning, The Ohio State University, OH, USA [2021 –present]

- Advisor: Zhenhua Chen (Ph.D.)

M.S. in Urban Planning, Hanyang University, Seoul, Korea [2018 –2020]

- Advisor: Sugie Lee (Ph.D.), GPA: 4.38/4.5

B.S. in Urban Planning and Engineering, Hanyang University, Seoul, Korea [2012 – 2018]

- Summa Cum Laude, GPA: 4.05/4.5

Academic Work Experience

Researcher, Industry-University Cooperation Foundation of Hanyang University [2020 – 2021]

- Supervisor: Sugie Lee (Ph.D.)

Peer-Reviewed Journal Publications

2023 **Ki, D.**, Park, K., and Chen, Z. Bridging the Gap between Pedestrian and Street Views for Human-Centric Environment Measurement: A GIS-based 3D Virtual Model. *Landscape and Urban Planning*. (Online First) ([Link](#))

2023 **Ki, D.**, Chen, Z., Lee, S., and Lieu, S. A Novel Walkability Index Using Google Street View and Deep Learning. *Sustainable Cities and Society*. (Online First) ([Link](#))

2023 **Ki, D.** and Chen, Z. Walkability Inequity in Los Angeles: Uncovering the Overlooked Role of Micro-level Features. *Transportation Research Part D: Transport and Environment*. 122, 103888 ([Link](#))

2023 Kim, J., **Ki, D.**, Osutei, N., Lee, S. and Hipp, J. R. Beyond Visual Inspection: Capturing Neighborhood Dynamics with Historical Google Street View and Deep Learning-based Semantic Segmentation. *Journal of Geographical Systems*. (Online First) ([Link](#))

2023 Ha, J., **Ki, D.**, Lee, S., and Ko, J. Mode Choice and the First/last Mile Burden: The Moderating Effect of Street-level Walkability. *Transportation Research Part D: Transport and Environment*. 116, 103646 ([Link](#))

- 2023 Hipp, J. R., Lee, S., **Ki, D.** and Kim, J. How Concentrated Disadvantage Moderates the Built Environment and Crime Relationship on Street Segments in Los Angeles. *Criminology & Criminal Justice*. (Online First) ([Link](#))
- 2022 Hipp, J. R., Lee, S., **Ki, D.** and Kim, J. Measuring the Physical Environment with Google Street View and Machine Learning: Consequences for Crime on Street Segments. *Journal of Quantitative Criminology*. 38(3), 537-565. ([Link](#))
- 2021 **Ki, D.** and Lee, S. Analyzing the Effects of Green View Index of Neighborhood Streets on Walking Time Using Google Street View and Deep Learning. *Landscape and Urban Planning*. 205, 103920. ([Link](#))
- 2021 Kim, J., Lee, S., Hipp, J. R. and **Ki, D.** Decoding Urban Landscapes: Google Street View and the Measurement Sensitivity. *Computers, Environment and Urban System*. 88, 101626. ([Link](#))
- 2021 **Ki, D.**, Kim, S. and Lee, S. Analysis on the Equity of Green in Seoul Using Google Street View and Deep Learning: Focused on the Comparison Between NDVI and Green Calculation Method Based on Street Images, *Journal of Korea Planning Association*. 56(4), 194-211.
- 2021 Kim, J., **Ki, D.** and Lee, S. Analysis of Travel Mode Choice Change by the Spread of COVID-19: The Case of Seoul, Korea. *Journal of Korea Planning Association*. 56(3), 113-129.
- 2021 Park, K., **Ki, D.** and Lee, S. Analysis on the Effect of Visual Characteristics of Street Environment on Pedestrian Satisfaction: Using Google Street View and Computer Vision Techniques. *Journal of the Urban Design Institute of Korea*. 22(3), 55-72.
- 2021 Lieu, S., Ha, J., Kim, H., **Ki, D.** and Lee, S. Analysis on Factors Influencing Human Perceptions and Pedestrian Satisfaction with a Streetscape Imagery in Seoul, Korea. *Journal of Korea Planning Association*, 56(2), 79-93.
- 2019 **Ki, D.** and Lee, S. Spatial Distributions and Location Characteristics of Airbnb in Seoul, Korea. *Sustainability*, 11(5), 4108. ([Link](#))
- 2019 Ha, J., **Ki, D.**, Lee, S. and Ahn, D. Identifying Urban Problems in Response to the 4th Industrial Revolution in Seoul, Korea: Application of Text Mining and Delphi Survey. *Seoul Studies*, 20(4), 1-21.
- 2019 **Ki, D.** and Lee, S. Analysis on the Relationship Between the Fine Dust Concentration and Subway Ridership and Evaluation of Fine Dust Response Policies. *Journal of Korea Planning Association*, 54(4), 79-93.

- 2019 Sa, K., **Ki, D.** and Lee, S. Analysis of Spatial Distribution and Influential Factors of Multi-cultural Perception in Seoul, Korea. *Journal of the Urban Design Institute of Korea*, 20(3), 95-114.
- 2018 **Ki, D.** and Lee, S. The Impacts of Neighborhood Sport Activity Facility on Exercise Time and Subjective Health Level: Focused on the National Sport Participation Survey (2013-2015) in Seoul, Korea. *Journal of Korea Planning Association*, 53(6), 19-35.

Conference Paper and Presentations

- 2022 **Ki, D. (presenter)**, Lieu, S., Chen, Z., and Lee, S. A Novel Walkability Index Using Google Street View and Deep Learning. *62nd Annual ACSP Conference*, Toronto, Nov. 3-6, (in English)
- 2022 **Ki, D. (presenter)** and Chen, Z. Measuring Equity in Neighborhood Walkability in US cities: From the Lens of Micro- and Macro-scale Indices. *16th NECTAR Conference*, Toronto, Jul. 20-22, (in English).
- 2021 Lee, S., **Ki, D.**, Hipp, J. R. and Kim, J. Analyzing the Association between Local Crime Patterns and Street-level Built Environments: Applications of Google Street View and Machine Learning. *61st Annual ACSP Conference*, Online, Oct. 23, (in English)
- 2020 Kim, J., **Ki, D.** and Lee, S. Analysis of Travel Mode Choice Change by the Spread of COVID- 19: The Case of Seoul, Korea. *Proceeding of Fall Conference of Korea Regional Science Association*, Online, Dec. 18, (in Korean) **Best Conference Paper Award**.
- 2020 Park, K., **Ki, D. (presenter)** and Lee, S. Analysis on the Effect of Visual Characteristics of Street Environment on Pedestrian Satisfaction: Using Google Street View and Computer Vision Techniques. *Proceeding of Fall Conference of the Urban Design Institute of Korea*, Online, Nov. 7, (in Korean) **Best Conference Paper Award**.
- 2020 Lieu, S., Ha, J., Kim, H., **Ki, D.** and Lee, S. Analysis on Factors Influencing Human Perceptions and Pedestrian Satisfaction with a Streetscape Imagery in Seoul, Korea. *Proceeding of Fall Conference of Korea Planning Association*, Online, Oct. 30. (in Korean)
- 2020 **Ki, D. (presenter)**, Kim, S. and Lee, S. Analysis on the Equity of Green in Seoul Using Google Street View and Deep Learning: Focused on the Comparison Between NDVI and Green Calculation Method Based on Street Images. *Proceeding of Spring Conference of Korea Planning Association*, Online, Apr. 25, (in Korean) **Best Conference Paper Award**.

- 2019 **Ki, D. (presenter)** and Lee, S. Analyzing the Effects of Green View Index of Neighborhood Streets on Walking Time by Purpose using Google Street View and Deep Learning. *Proceeding of Spring Conference of Korea Planning Association*, Donga University, Oct. 26, (in Korean) **Best Conference Paper Award.**
- 2019 **Ki, D. (presenter)** and Lee, S. Analysis on the Relationship Between the Fine Dust Concentration and Subway Ridership and Evaluation of Fine Dust Response Policies. *Proceeding of Fall Conference of Korea Planning Association*, Gachon University, Apr. 27, (in Korean) **Best Conference Paper Award.**
- 2018 Ha, J., **Ki, D.**, Lee, S. and An, D. Identifying Urban Problems (issues) in Response to the 4th Industrial Revolution in Seoul, Korea: Application of Text Mining and Delphi Survey. *Proceeding of Fall Conference of Korea Regional Science Association*, Seoul National University, Nov. 30. (in Korean)
- 2018 Sa, K., **Ki, D.** and Lee, S. Analysis of Spatial Distribution and Influence Factors of Multiple Cultural Perception in Seoul, Korea. *Proceeding of Fall Conference of the Urban Design Institute of Korea*, Yeungnam University, Nov. 17, (in Korean) **Best Conference Paper Award.**
- 2018 **Ki, D. (presenter)** and Lee, S. A Study on the Spatial Distributions and Locational Characteristics of Airbnb in Seoul, Korea. *Proceeding of Fall Conference of Korea Planning Association*, Korea National University of Transportation, Oct. 27. (in Korean)
- 2018 **Ki, D. (presenter)** and Lee, S. Spatial Distribution and Location Characteristics of Airbnb in Seoul, Korea. *8th Asian Seminar in Regional Science (ASRS)*, Jeju National University, Sep. 8. (in English)
- 2018 **Ki, D. (presenter)** and Lee, S. The Effect of Neighborhood Sports Activity Facility on Sports Activity Time and Subjective Health Level. *Proceeding of Spring Conference of the Urban Design Institute of Korea*, University of Seoul, Apr. 21. (in Korean)

Research Reports

- 2021 Hipp, J. R., Kim, J., Lee, S., Forthun, B., Osutei, N., **Ki, D.** “Irvine at 50: From a Planned Community to a Growing Job Center” MFI Report: 2021_2. Irvine, CA: Metropolitan Futures Initiative (MFI), University of California Irvine. December, 2021. ([Link](#))

Research Projects

- 2023-present “Economic Development Impacts of Ohio Department of Transportation (ODOT) Funding on Public Roadways”
- 2020-2021 “International Research Collaboration with Department of Urban Planning and Public Policy in the University of California, Irvine”
-with Dr. John R. Hipp, Jaehong Kim (UC Irvine), and Sugie Lee (Hanyang University)
Contribution: Literature review, Data collection (Google Street View), Applying Interpretable Machine Learning (IML), Computer Vision (semantic segmentation), and Visualization.
- 2020 “Analysis of Commuting Behavior in Seoul Metropolitan Area”, Funded by Korea Land & Housing Corporation (PI: Dr. Sugie Lee)
Contribution: Data collection using Google Direction API, Data coding, Statistical analysis, and Visualization.
- 2020-2021 “Analysis of Vulnerable Green Area in Seoul: Using Google Street View and Deep Learning”, Funded by Hanyang University (PI: Dr. Sugie Lee)
Contribution: Literature review, Data collection (Google Street View and NDVI), Data coding, Computer vision using semantic segmentation, and Statistical analysis using the SEM (Spatial Error Model) and SLM (Spatial Lag Model), and Visualization.
- 2020-2021 “Determinant Factors of Space-Time Patterns in Pedestrian Crash using Machine Learning with LIME Model and VR-based Pedestrian Safety Research for the Disadvantaged Persons”, Funded by National Research Foundation of Korea (PI: Dr. Sugie Lee)
Contribution: Literature review.
- 2018-2021 “Developing the Urban Thermal Environmental Planning and Design System for Adapting Climate Changes”, Funded by Korea Agency for Infrastructure Technology Advancement (PI: Dr. Kyushik Oh)
Contribution: Literature review, Data collection (weather records from Automatic Weather System – AWS), and Data coding.
- 2018-2021 “Development of Evaluation Model for Visual Walking Amenities using Google Street View API and Deep Learning Techniques”, Funded by National Research Foundation of Korea (PI: Dr. Sugie Lee)
Contribution: Literature review and Data collection using Google Street View API.
- 2018 “A Study on Travel Behavior According to the Mobility Level in Metropolitan Area”
Funded by Hanyang University (PI: Dr. Sugie Lee)

Contribution: Literature review, Data coding (household travel survey, smart card transaction), Statistical analysis, and Visualization.

2018 “Consulting Project to Identify Primary Urban Problems in the City of Seoul”, Funded by Seoul City Government (PI: Dr. Sugie Lee)

Contribution: Data collection using web crawling (unstructured text).

2018 “A Study on Social Capital Types and Their Effects on Community Social Integration of Multi-Cultural Urban Space”, Funded by POSCO Foundation (PI: Dr. Sugie Lee)

Contribution: Literature review, Data collection, Data coding, and Statistical analysis using the multi-level logistic regression.

Teaching Experience

CRPLAN 3000 – Planning Resilient Environments (3 credits)

- Instructor: Dr. Zhenhua Chen

2023 SP.

- In charge of grading

CRPLAN 6080 - Advanced GIS for Professional Planning Practice (4 credits)

- Instructor: Dr. Zhenhua Chen

- In charge of updating course material

CRPLAN 5001 - Introduction to GIS for Planning (4 credits)

2022 AU.

- Instructor: Dr. Zhenhua Chen

- In charge of lab session (2 hours / week)

Awards and Honors

2022 Academic Achievement Award for the Best Article in Journal of the Urban Design Institute of Korea of 2021, Urban Design Institute of Korea

Title: “Analysis on the Effect of Visual Characteristics of Street Environment on Pedestrian Satisfaction: Using Google Street View and Computer Vision Techniques”

Best Paper Award, Annual Conference of the Korea Regional Science Association

2020

Title: “Analysis of Travel Mode Choice Change by the Spread of COVID-19: The Case of Seoul, Korea”

2020

Best Paper Award, Annual Conference of the Urban Design Institute of Korea

- Title: “Analysis on the Effect of Visual Characteristics of Street Environment on Pedestrian Satisfaction: Using Google Street View and Computer Vision Techniques”
Best Paper Award, Annual Conference of the Korea Planning Association
- 2020 Title: “Analysis on the Equity of Green in Seoul Using Google Street View and Deep Learning: Focused on the Comparison Between NDVI and Green Calculation Method Based on Street Images”
Best Paper Award, Annual Conference of the Korea Planning Association
- 2019 Title: “Analyzing the Effects of Green View Index of Neighborhood Streets on Walking Time by Purpose using Google Street View and Deep Learning”
Best Paper Award, Annual Conference of the Korea Planning Association
- 2019 Title: “Analysis on the Relationship Between the Fine Dust Concentration and Subway Ridership and Evaluation of Fine Dust Response Policies”
Best Paper Award, Annual Conference of the Urban Design Institute of Korea
- 2018 Title: “Analysis of Spatial Distribution and Influence Factors of Multiple Cultural Perception in Seoul, Korea”
- 2018 President Award, Korea Planning Association
- 2018 Graduation Excellence Award, Hanyang University (Second on the List)
- 2017 Academic Excellence Award, Hanyang University (Third on the List)
- 2017 Academic Excellence Award, Hanyang University (Second on the List)
- 2016 Academic Excellence Award, Hanyang University (First on the List)
- 2016 Academic Excellence Award, Hanyang University (First on the List)
- 2015 Academic Excellence Award, Hanyang University (Second on the List)
- 2012 Academic Excellence Award, Hanyang University (Second on the List)

Funding & Scholarship

2023. Su. – City and Regional Planning Graduate Research Assistantship – The Ohio State
present University
- 2022 Au. – City and Regional Planning Graduate Teaching Assistantship – The Ohio State
2023 Sp. University
- 2021 University Fellowship - The Ohio State University

- 2018 Scholarship for Academic Excellence (\$15,500/2 years) - Hanyang University
- 2017 Scholarship for Academic Excellence (\$2,300/semester) - Hanyang University
- 2016 National Graduate Science & Technology Scholarship (\$4,100/semester)
- Korea Science and Engineering Foundation
- 2016 Scholarship for Academic Excellence (\$4,100/semester) - Hanyang University
- 2015 Scholarship for Academic Excellence (\$2,900/semester) - Hanyang University
- 2012 Scholarship for Academic Excellence (\$2,900/semester) - Hanyang University
- 2012 Scholarship for Academic Excellence (\$2,900/semester) - Hanyang University
- 2012 Company-sponsored Scholarship (\$3,000/semester) – Megastudy

Public Service

Ad-hoc Reviewer, *Landscape and Urban Planning, Transportation Research Part A: Policy and Practice, Cities*