Seung Jun Choi

Austin, TX 78712, USA 152
(+1)512-803-0211 | jun.choi@utexas.edu

EDUCATION

The University of Texas at Austin   **Austin, TX**
Ph.D. in Community and Regional Planning   Expected 2026
- National Science Foundation (NSF) Research Trainee in Ethical AI

The University of Texas at Austin   **Austin, TX**
M.Sc. in Community and Regional Planning   2022
- Professional Report: Spatiotemporal Climate Risk Vulnerability Assessment to Extreme Heat and Particulate Matter: Combining Realtime Concentration of De Facto Population

Dankook University   **Jukjeon, Yongin**
B.A. in Real Estate and Urban Planning (Dual Degree)   2020
- Summa Cum Laude

Myungduk Foreign Language High School   **Seoul**
Major in English & German   2013

PUBLICATIONS

Peer-reviewed Articles
* Primary/Corresponding Author

1. **Choi, S. J.**, *Jiao, J., Lee, H., & Farahi, A.* (2023). Combatting the Mismatch: Modeling Bike-sharing Rental and Return Machine Learning Classification Forecast in Seoul, South Korea. *Journal of Transport Geography.* https://doi.org/10.1016/j.jtrangeo.2023.103587

2. *Jiao, J.,* **Choi, S. J.***, *Wang, H., & Farahi, A.* (2023) Evaluating Air Quality Status in Chicago: Application of Street View Imagery and Urban Climate Sensors. *Environmental Modeling & Assessment.* https://doi.org/10.1007/s10666-023-09894-1

3. *Jiao, J., Lee, H.., &* **Choi, S. J.** (2022). Impacts of COVID-19 on Bike-Sharing Usages in Seoul, South Korea. *Cities.* https://doi.org/10.1016/j.cities.2022.103849

4. *Jiao, J.,* **Choi, S. J.***, *& Xu, W.* (2021). Tracking Property Ownership Variance and Forecasting Housing Price with Machine Learning and Deep Learning. https://ieeexplore.ieee.org/document/9671298

5. *Lee, H.,* **Choi, S. J.***, *& Jiao, J.* (2021). Examining the COVID-19 Effects on Travel Behavior Using Smart IoT Sensors: A Case Study of Smart City Planning in Gangnam, Seoul. *International Journal of Sustainable Building Technology and Urban Development* https://doi.org/10.22712/susb.20210029

6. *Jiao, J., Bai, S., & **Choi, S. J.*** (2021). Understanding E-scooter Incidents Patterns in Street Network Perspective: A Case Study of Travis County, Texas. *Sustainability.* https://doi.org/10.3390/su131910583

7. *Lee, H., Jiao, J. & **Choi, S. J.*** (2021). Identifying Spatiotemporal Transit Deserts in Seoul, South Korea. *Journal of Transport Geography.* https://doi.org/10.1016/j.jtrangeo.2021.103145

Under Peer Review Process

1. ***Choi, S. J.*, & *Jiao, J.*** (2023). Uncovering Electric Vehicle Ownership Disparities with Unsupervised Machine Learning Technique *Journal of Sustainable Transport* (under review)

2. *Jiao, J., **Choi S. J.**, & Nguyen, C.* (2023). Towards Equitable Transportation Electrification Plan: Measuring Public Electric Vehicle Charging Station Access Disparities in Austin, TX. *Transport Policy* (under review)

3. ***Choi, S. J.*, *Jiao, J., & Karner, A.*** (2023) Tracing the Effects of COVID-19 on Short and Long Bike-sharing Trips using Machine Learning. *Travel Behaviour & Society* (1st-revision under review)

4. *Seong, K., **Choi, S. J.***, *& Jiao, J.* (2023). IoT Sensors as a Tool for Assessing Spatiotemporal Risk to Extreme Heat. *Journal of Environmental Planning and Management* (under review)

Research Report

1. *Seong, K., & **Choi, S. J.*** (2022). Extreme Heat and Particulate Matter Exposure and Risk Assessment in Seoul Metropolitan Region. Small Grant Research Program. The Seoul Institute. https://www.si.re.kr/node/66564

2. *Karner, A., Shuster, J., Tucker, R., Banker, C., Butcher, V. Byrne, V., Chen, Y., **Choi, S. J.**, Gay, J., Mabalatan, F., Meijia, M., Randall, P., Vargas, A., Vearil, K., & Willis, O.* (2022). Austin Transit Report: *Transit Rider Needs and Visions in the Texas State Capital.* Community and Regional Planning, School of Architecture, The University of Texas at Austin. https://sites.utexas.edu/karner/files/2022/10/ATX-Transit-Report-FINAL.pdf

CONFERENCE PROCEEDINGS & PRESENTATIONS
* Primary/Corresponding Author

1. UT Energy Week 2023: What Starts Here Energizes the World
   (Presenter) *Jiao, J. & **Choi, S. J.**** Toward Equitable Transportation Electrification in Austin, TX.
   https://sites.utexas.edu/energy-week/2023-program/tuesday-2023/

2. TRB (Transportation Research Board) 2023 Annual Meeting
   (Presenter) **Choi, S. J.****, Jiao, J. & Karner, A.* (2023). Tracing the Effects of COVID-19 on Short and Long Bike-sharing Trips using Machine Learning

3. ACSP (Association of Collegiate Schools of Planning) 2022 Annual Conference
   (Presenter) **Choi, S. J.,** *Wang, H., Jiao, J., & Farahi, A.* (2022). Examining the Impacts of Land Use on Air Quality in Chicago: Application of Street View Imagery and Hyperlocal Urban Climate Sensing. Track 1 - Technology, Society and Analytical Methods
   https://cdn.ymaws.com/www.acsp.org/resource/resmgr/2022_conference/docs/22bkofacceptedabstracts_v1.pdf

4. Sustainable Built Environment (SBE) 2022 Seoul Conference.
   (Presenter) **Choi, S. J.****, Seong, K. & & Jiao, J.* (2022). Spatiotemporal Climate Risk Vulnerability Assessment to Extreme Heat and Particulate Matter: Combining Realtime Concentration of De Facto Population.
   http://www.sbe22seoul.com/index.php

5. IEEE BigData 2021 International Conference
   (Presenter) *Jiao, J.,* **Choi, S. J.****, & Xu, W.* (2021). Tracking Property Ownership Variance and Forecasting Housing Price with Machine Learning and Deep Learning.
   https://ieeexplore.ieee.org/document/9671298

6. ACSP (Association of Collegiate Schools of Planning) 2021 Annual Conference
   (Presenter) **Choi, S. J.****, Jiao, J., Bissiri, A., & Karner, A.* (2021). COVID-19 Effects on Bike-Sharing in Two Global Cities. Track 15 #625 – Transportation & Infrastructure Planning

   (Co-author) *Jiao, J., Lee, H., &* **Choi, S. J.** (2021). Impact of COVID-19 on Bike-Sharing Usages in Seoul, South Korea. Track 1 # 568-Analytical Methods, Technology and Society
   https://cdn.ymaws.com/www.acsp.org/resource/resmgr/2021_conference/files/21bkofacceptedabstractsv2.pdf

RESEARCH EXPERIENCE

January 2021 – present
Graduate Research Assistant, Urban Information Lab, The University of Texas at Austin
Director: Dr. Junfeng Jiao | Co-director: Dr. Arya Farahi
- o Oversaw research design, drafted manuscripts, designing figures, and provided assistance in grant proposal writing and submission processes.

- 2022 – 2023 Energy Seed Grant Program, Energy Institute, The University of Texas at Austin:
  Research Fellow 2022-2023
  - o Toward Equitable Transportation Electrification in Austin, TX
    - ▪ Spearheaded the analysis of opportunities and challenges associated with public EV charger and EV registration in Austin using unsupervised machine learning. Other responsibilities hold training the undergraduate interns.

- 2022 Small Grant Program, The Seoul Institute:
  Research Fellow 2022-2023
  - Smart Seoul Data of Things (S-DoTs) Climate IoT Sensor Data Analytics in Seoul S. Korea
    - Evaluated extreme heat and particulate exposure by leveraging GPS-based big data and urban climate IoT sensors, conducting anomaly analysis (iForest) using machine learning techniques.

- UT Good Systems | Bridging Barrier, The University of Texas at Austin:
  Research Fellow 2021-2022
  - Microsoft Project Eclipse Sensor Installation in Austin & Data Analytics
    - Conducted a pilot study in Chicago to test the application of Project Eclipse sensors for measuring city air quality. Integrated Google Street View (GSV) with the use of Convolution Neural Network (CNN) and dimensionality reduction techniques into the analysis.
    - Compared the performance of multiple sensors from various providers and collaborated with the City of Austin (COA), Microsoft Research Team, and the Texas Advanced Computing Center (TACC) to determine optimal locations for sensor installation in Austin.

  - Austin AI Housing Analysis
    - Conducted supervised machine learning and deep learning analytics, utilizing Recurrent Neural Networks (RNN) and Long Short-Term Memory (LSTM) models, to predict the future housing prices in Austin.

June – December 2020
Research Assistant, Urban Data Lab, Dankook University
Director: Dr. Hye Kyung Lee

- Exploring Bike-sharing as a Micromobility Service: An Investigation
  - Impacts of COVID-19 on Bike-Sharing Usages in Seoul, S. Korea
    - Analyzed multi-period bike-sharing usage data to assess its growth and the impact of COVID-19 on bike-sharing patterns.

- Measuring Spatiotemporal Transportation Accessibility in Seoul with Real-time Big Data
  - Identifying Spatiotemporal Transit Deserts in Seoul, S. Korea
    - Processed mobile phone signal-based floating population data across time and space, serving as a proxy for measuring spatiotemporal transportation usage demand.

TEACHING EXPERIENCE

Spring 2023
Teaching Assistant, School of Undergraduate Studies, The University of Texas at Austin
UGS 302 Ethical AI: Good Systems
- Planned and facilitated weekly class discussion sessions and co-delivered lectures on Ethics and AI.

Fall 2022
Lead Teaching Assistant, Department of Computer Science, The University of Texas at Austin
CS 395T Case Studies in Machine Learning
- Directed a team of teaching assistants in computer science for the course, managed weekly lab sessions, and co-delivered lectures. Additional responsibilities involved coordinating logistics with both the school and the edX program coordinator.

Fall 2021 – Spring 2022
Course Development, Department of Computer Science, The University of Texas at Austin
CS 395T Case Studies in Machine Learning
- Developed a comprehensive machine learning course with end-to-end applications. Created lecture slides, demo codes, and assignments, as well as led lab sessions, all of which were recorded and made available through the edX platform.

Spring 2022
Guest Lecturer, School of Architecture, The University of Texas at Austin
CRP 386-5 Urban Geographic Information System (GIS)
- Delivered a lecture on utilizing remote sensing with GIS and shared tips for effective data visualization and communication.

AWARDS & HONORS

2022	NSF Research Traineeship Fellowship in Ethical AI, National Research Foundation
2021	Graduate School Continuing Fellowship, The University of Texas at Austin
2020	Professor Terry Kahn Endowed Graduate Fellowship, The University of Texas at Austin
2020	Summa Cum Laude (4/74), Dankook University
2019	Yancheon Center Prize, Head of Youthzone Yancheon Center, Korea
2018	Grand Prize-Competition Winner, Minister of Land, Infrastructure and Transport Korea
2014 –2019	Scholarship of Academic Excellence for all Four Years, Dankook University

AWARDED GRANT WRITING EXPERIENCE

2022 – 2023 Energy Seed Grant, Energy Institute, The University of Texas at Austin
- Toward Equitable Transportation Electrification in Austin, TX

2022 Small Grant Program, The Seoul Institute
- Analysis of Heatwave and Particulate Matter Exposure Risk in Seoul: Combining Real-time De Facto Population Data

WORKSHOPS

October 2022
NSF- NRT Trainee, NRT-AI: Convergent, Responsible, and Ethical Artificial Intelligence Training Experience for Roboticists, 2022 NSF Research Traineeship (NRT) Annual Meeting, Blacksburg, Virginia

SKILLS & ACTIVITIES

Languages: Native Korean-speaker; Fluent in English; Conversational Proficiency in German (B1-Gut)
Technical Skills: GIS (ArcMap & ArcGIS Pro); TransCAD; Python; R; Tableau; SPSS; STATA
Design Skills: Adobe Photoshop; InDesign; ClipStudio
Certifications & Training:
28 June 2020
National Technical Qualification Certificate as Urban Planning Engineer
Korea Ministry of Land, Infrastructure and Transport

03 March 2012
Zertifikat Deutsch B1: Gut
Goethe-Institute, Seoul

Activities:
September – December 2021
Planning Practicum: Creating a Community Land Trust (CLT) in Austin's Cherrywood Neighborhood
Community Partner: Cherrywood Neighborhood Association

June – November 2019
Community Outreach Group
Director of Youth Committee, Yancheon-center, Seoul, Korea

April 2016 – January 2018
Military Duty Service
Sergeant Squad Leader, Army of Artillery, Korea

May – October 2015
Community Engagement Group: Urban Planner Training Courses
Participant, Korea Planning Association (KPA) & Seoul Metropolitan Government

Interests: Urban Informatics, Transportation, Machine Learning, Equity, Climate Change, & Data Visualization

Last Update: 2023-04-25