

# Jangho Lee

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## PROFESSIONAL PROFILES

- Google Scholar: <https://scholar.google.com/citations?user=wBEE2YAAAAAJ>
- ORCID: <https://orcid.org/0000-0002-8942-1092>
- LinkedIn: <https://www.linkedin.com/in/jholee92/>



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## RESEARCH INTERESTS

Statistical Meteorology & Climatology; Climate Informatics; Urban Climate; Climate Impact; Downscaling; Land Modelling; Remote Sensing; Urban Flooding; Urban Sustainability; Machine Learning; Deep Learning

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## EDUCATION

**TEXAS A&M UNIVERSITY** *2018-2023*

*Doctor of Philosophy in Atmospheric Science*

- Advisor: Dr. Andrew Dessler

**SEOUL NATIONAL UNIVERSITY** *2011-2018*

*Bachelor of Science in Earth and Environmental Science*

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## RESEARCH EXPERIENCE & PROFESSIONAL APPOINTMENT

**UNIVERSITY OF ILLINOIS CHICAGO** *2023-Present*

*Postdoctoral Researcher*

- Led the publication of multiple paper on urban climate research and presented at various conferences
- Directed collaboration with ANL and ORNL for E3SM & ELM simulations
- Managed the social engagement program in partnership with the Puerto Rican Agenda of Chicago
- Served as a leader of the postdoc association to lead the CROCUS meeting at UIC

**TEXAS A&M UNIVERSUTY** *2018-2023*

*Graduate Research Assistant*

- Led the publication of multiple peer-reviewed paper on extreme climate and socioeconomic impact
- Led the Team in Cyber-Training program held at University of Maryland Baltimore County
- Served as international student representative and electives representative in Graduate Student Council

**SEOUL NATIONAL UNIVERSITY** *2014-2018*

*Undergraduate Intern*

- Led the publication of multiple peer-reviewed paper on statistical climate, extreme temperature event, and dust source identification research and presented findings at various conferences

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## COMMUNITY ENGAGEMENT & OTHER EXPERIENCES

**PUERTO RICAN AGENDA & CHATHAM BLACK COMMUNITY OF CHICAGO** *2024-Present*

*Scientific Advising Committee*

- Facilitated a town hall meeting to lead the proposal of Tree Equity Grant of Chicago

**REPUBLIC OF KOREA ARMY** *2012-2014*

*Drill Sergeant at Korean Army Training Center*

- Trained 3000+ incoming soldiers annually

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**PEER-REVIEWED PUBLICATIONS**

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\* Corresponding Author | + Mentored Students

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**Under Review**

- Lee, J\*, Park, S. Y., Wadhwa, A., Packman, A., Nesbitt, S., Garcia., M. H., Berkelhammer, M., Sharma, A., Kotamarthi, R., Hence, D., Miller, W (2025) Information Content of Satellite Observations, Hydrological Models, and Crowdsourced Data for Urban Flood Monitoring. *Water Resources Research*, [Under Review]
- Lee, J\* & Berkelhammer, M (2025) Evaluating the Influence of Traffic Congestion on Surface Urban Heat Island Intensity. *Geophysical Research Letters*, [Under Review]
- Lee, J\*, Berkelhammer, M., Park, S. Y., Wilson, M (2025) Analysis of Urban Flooding in Chicago Based on Crowdsourced Data: Drivers and the Need for Community-Based Mitigation Strategies. *Environmental Research: Infrastructure and Sustainability*, [Under Review]
- Cho, A\*, Love, N., Cintron, R., Nicholson, Jane., Xu, L., Nunez-Mir, G., Lee, J., Berkelhammer, M., Gonzalez-Meler, M (2025) Plant Species Selection and Participatory Community Co-design are Essential in Balancing Ecosystem Services and Disservices in Urban Areas. *Environmental Research Letters*, [Under Review]

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**2025**

1. Lee, J\* & Park, S.Y. (2025) WGAN-GP-Based Conditional GAN (cGAN) with Extreme Critic for Precipitation Downscaling in a Key Agricultural Region of the Northeast U.S. *IEEE Access-Geoscience and Remote Sensing Society Section*, 13, 46030-46041.
2. Lee, J\* (2025) Inferring Urban Air Temperatures from Land Surface Temperatures with the E3SM Land Model (uELM), Satellite Observations, and Measurement Campaign. *IEEE Access-Geoscience and Remote Sensing Society Section*, 13, 32564-32573.
3. Lee, J\* (2025) Estimating Near-Surface Air Temperature from Satellite-Derived Land Surface Temperature Using Temporal Deep Learning: A Comparative Analysis. *IEEE Access-Geoscience and Remote Sensing Society Section*, 13, 28935-28945.

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**2024**

4. Lee, J\*, & Berkelhammer, M. (2024) Observational Constraints on the Spatial Effect of Greenness and Canopy Cover on Urban Heat in Major Midlatitude City. *Geophysical Research Letters*, 51(1), e2024GL110847.
5. Cho, A\*, Dziedzic, N., Davis, A., Hanson, C., Lee, J., Nunez-Mir, G., Gonzalez-Meler, M. A. (2024). Leaf Functional Traits Highlight Phenotypic Variation of Two Tree Species in the Urban Environment. *Frontiers in Plant Science Functional Plant Ecology*, 15, 1450723.
6. Lee, J\* (2024). Assessment of U.S. Urban Surface Temperature using GOES-16 and 17 Data: Urban Heat Island and Temperature Inequality. *Weather, Climate, and Society*, 16(2), 315-329.
7. Lee, J\*, Berkelhammer, M., Wilson, M. D., Love, N., & Cintron, R. (2024). Urban Land Surface Temperature Downscaling in Chicago: Addressing Ethnic Inequality and Gentrification. *Remote Sensing*, 16(9), 1639.
8. Lee, J\*, & Hu, M. (2024). Effect of Environmental and Socioeconomic Factors on Increased Early Childhood Blood Lead Levels: A Case Study in Chicago. *International Journal of Environmental Research and Public Health*, 21, 383.
9. Lee, J., & Dessler, A. E\*. (2024). Improved Surface Urban Heat Impact Assessment Using GOES Satellite Data: A Comparative Study With ERA-5. *Geophysical Research Letters*, 51(1), e2023GL107364.

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**Prior to 2024**

10. Lee, J\*, & Dessler, A. E. (2023). Future Temperature-Related Deaths in the US: The Impact of Climate Change, Demographics, and Adaptation. *GeoHealth*, 7(8), e2023GH000799.
11. Lee, J\*, & Dessler, A. E. (2022). The Impact of Neglecting Climate Change and Variability on ERCOT's Forecasts of Electricity Demand in Texas. *Weather, Climate, and Society*, 14(2), 499-505.

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12. Lee, J., Mast, J. C., & Dessler, A. E\*. (2021). The Effect of Forced Change and Unforced Variability in Heat Waves, Temperature Extremes, and Associated Population Risk in a CO<sub>2</sub>-Warmed World. *Atmospheric Chemistry and Physics*, 21(15), 11889-11904.
  13. Lee, J., Shi, Y. R., Cai, C., Ciren, P., Wang, J., Gangopadhyay, A., & Zhang, Z\*. (2021). Machine Learning Based Algorithms for Global Dust Aerosol Detection from Satellite Images: Inter-Comparisons and Evaluation. *Remote Sensing*, 13(3), 456.
  14. Lee, J., & Kim, K. Y\*. (2018). Analysis of Source Regions and Meteorological Factors for the Variability of Spring PM10 Concentrations in Seoul, Korea. *Atmospheric Environment*, 175, 199-209.
  15. Lee, J\*. (2017). Future Trend in Seasonal Lengths and Extreme Temperature Distributions over South Korea. *Asia-Pacific Journal of Atmospheric Sciences*, 53, 31-41.

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#### **INVITED TALKS & PRESENTATIONS (RECENT 3 YEARS)**

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1. Urban Land Surface Temperature Downscaling in Chicago: Addressing Ethnic Inequality and Gentrification, AGU, 2024
2. Urban Land Surface Temperatures: Importance, Measurements, and Multidisciplinary Applications, Florida State University, 2024 [Invited]
3. Urban Land Surface Temperatures: Importance, Measurements, and Multidisciplinary Applications, University of Illinois Chicago, 2024 [Invited]
4. Urban Land Surface Temperature Downscaling in Chicago: Addressing Socioeconomic Disparities, Seoul National University, 2024 [Invited].
5. Assessment of U.S. Urban Surface Temperature using GOES-16 and 17 Data: Urban Heat Island and Temperature Inequality, AGU, 2023

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#### **PYTHON PACKAGES, BOOKS & EDUCATION MATERIALS**

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- STELAR (Spatio-TEmporaL lAg-based Regression) GAM: [https://github.com/jangholee92/stelar\\_gam](https://github.com/jangholee92/stelar_gam)
- Python and Statistics for Climate and Atmospheric Informatics: <https://github.com/jangholee92/pythonForCI>
- E3SM & ELM Documentation with OLM: [https://github.com/jangholee92/ELM\\_Tutorial](https://github.com/jangholee92/ELM_Tutorial)

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#### **AWARDS & SCHOLARSHIPS**

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- Top Cited Paper in GeoHealth, AGU, 2025
- Outstanding Graduate Student Research Award, Texas A&M University, 2021
- Outstanding Graduate Student Seminar Award, Texas A&M University, 2021
- Best Thesis Award, Seoul National University, 2017
- Merit-Based Scholarship, Seoul National University, 2011-2017

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#### **TECHNICAL PROFICIENCY**

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- Proficient in Python, R, and Linux
- Proficient in ML, DL, and HPC Modules: TensorFlow, Keras, Scikit-Learn, XGBoost, Dask
- Experience in land-atmospheric modelling (ELM)
- Proficient in developing python packages

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#### **RESIDENTIAL STATUS**

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- Lawful Permanent Resident (LPR) of the United States
- South Korea Citizen