Jangho Lee

CROCUS Postdoctoral Researcher at University of Illinois Chicago
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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/

RESEARCH INTERESTS

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

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*

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

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 Sergent at Korean Army Training Center

- Trained 3000+ incoming soldiers annually

PEER-REVIEWED PUBLICATIONS

** Corresponding Author | + Mentored Students*

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 Urban Flooding: Satellite, Simulations, and Citizen Science. *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]

2025

1. **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*, [In Press]
2. Cho, A*., Love, N., Cintron, R., Nicholson, J., 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*, 20, 051003.
3. **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.
4. **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.
5. **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.

2024

6. **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.
7. 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.
8. **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.
9. **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.
10. **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.
11. **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.

Prior to 2024

12. **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.
13. **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.

14. **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_2-Warmed World. *Atmospheric Chemistry and Physics*, *21*(15), 11889-11904.
15. **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.
16. **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.
17. **Lee, J*.** (2017). Future Trend in Seasonal Lengths and Extreme Temperature Distributions over South Korea. *Asia-Pacific Journal of Atmospheric Sciences*, *53*, 31-41.

INVITED TALKS & PRESENTATIONS (RECENT 3 YEARS)

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

AWARDS & SCHOLARSHIPS

- 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

PYTHON PACKAGES, BOOKS & EDUCATION MATERIALS

- STELAR (Spatio-TEmporaL lAg-based Regression) GAM: https://github.com/jangholee92/stelar_gam
- Python and Statistics for Climate and Atmospheric Informatics (Book - in Prep): https://github.com/jangholee92/pythonForCI
- E3SM & ELM Documentation with OLMT: https://github.com/jangholee92/ELM_Tutorial

TECHNICAL PROFICIENCY

- 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

RESIDENTIAL STATUS

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