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, Statistical Climatology, Climate Informatics, Urban Climate, Climate Impact, Downscaling, Land Modelling, Remote Sensing, Urban Hydrology, Urban Flooding, Machine Learning & Deep Learning

EDUCATION

TEXAS A&M UNIVERSITY   *2018-2023*
Doctor of Philosophy in Atmospheric Science

- Advisor: Dr. Andrew Dessler
- Thesis: *Extreme Temperature Events Caused by Climate Change and Variability: Drivers and its Impact*

SEOUL NATIONAL UNIVERSITY   *2011-2018*
Bachelor of Science in Earth and Environmental Science

- Thesis: *Analysis of Source Regions and Meteorological Factors for the Variability of Spring PM10 Concentrations in Seoul, Korea*

RESEARCH EXPERIENCE / EMPLOYMENT

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 Argonne National Lab and Oak Ridge National Lab for E3SM & ELM simulations
- Managed the social engagement program in partnership with the Puerto Rican Agenda of Chicago
- Led the scientific advisory group of the Greater Chatham Black community of Chicago
- Served as a leader of the postdoc association to lead the CROCUS meeting at the University of Illinois Chicago

TEXAS A&M UNIVERSITY   *2018-2023*
Graduate Research Assistant

- Led the publication of multiple peer-reviewed paper on extreme climate and socioeconomic impact research and presented findings at various conferences
- Led the Team in Cyber-Training program held at University of Maryland Baltimore County, resulting in multi-institute collaboration and publication
- 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 (PRA) OF CHICAGO   *2024*
Scientific Advising Committee
- Facilitated a town hall meeting to educate marginalized communities of the PRA about heat-related risks
- Advised about tree planting in marginalized communities and presented its potential impact

GREATER CHATHAM BLACK COMMUNITY OF CHICAGO   *2024*
Scientific Advising Committee
- Served as a scientific advisor for the Chicago Tree Equity Grant

REPUBLIC OF KOREA ARMY   *2012-2014*
Drill Sergeant at Korea Army Training Center (KATC)

PEER-REVIEWED PUBLICATIONS

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*, [In Press]

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.

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.

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.

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_2-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.

INVITED TALKS & PRESENTATIONS (LAST 3 YEARS)

1. "Urban Land Surface Temperatures: Importance, Measurements, and Multidisciplinary Applications", Florida State University, 2024 (*Invited*)

2. "Urban Land Surface Temperatures: Importance, Measurements, and Multidisciplinary Applications", University of Illinois Chicago, 2024 (*Invited*)

3. "Urban Land Surface Temperature Downscaling in Chicago: Addressing Socioeconomic Disparities", Seoul National University, 2024 (*Invited*)

4. "Assessment of U.S. Urban Surface Temperature using GOES-16 and 17 Data: Urban Heat Island and Temperature Inequality", AGU, 2024

5. "Future Temperature Related Deaths in the US: Effect of Climate, Demographics, and Adaptation", AGU, 2023

AWARDS & SCHOLARSHIPS

- 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

TECHNICAL PROFICIENCY

- Proficient in Python and R
- Proficient in ML/DL/HPC Modules: TensorFlow, Keras, Scikit-Learn, XGBoost, Dask
- Proficient in running ultrahigh resolution E3SM Land Model (uELM) (https://jangholee.com/e3sm-elm-documentation/)

RESIDENTIAL STATUS

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