

# Jangho Lee

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## PROFESSIONAL PROFILES

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- 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

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Climate Informatics, Climate & Atmospheric Data Analysis, Urban Climate, Climate Impact, Downscaling, Land Modelling (ELM), Remote Sensing, Urban Hydrology, Urban Flooding, Environmental Justice, ML/DL

## EDUCATION

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**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

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**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

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### 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)*

- Trained 4000+ new incoming soldiers

## PEER-REVIEWED PUBLICATIONS

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### First / Corresponding Authored Publications

1. **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.
2. **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.
3. **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.
4. **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.
5. **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.
6. **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.
7. **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.
8. **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.
9. **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.
10. **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.
11. **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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### **Co-Authored Publications**

1. Cho, A., Dzedzic, 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*, [Under Review]
2. Cho, A., Love, N., Nunez-Mir, G., **Lee, J.**, Gonzalez-Meler, M. A. (2024) The Importance of Plant Species Selection in Balancing Ecosystem Services and Disservices when Implementing Equitable Nature-Based Solutions. *Environmental Research Letters*, [Under Review]

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### **INVITED TALKS & PRESENTATIONS**

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
6. “Future Temperature Related Deaths in the US: Effect of Climate, Demographics, and Adaptation”, Texas A&M University, 2022 (*Invited*)
7. “The Impact of Neglecting Climate Change and Variability on ERCOT’s Forecasts of Electricity Demand in Texas, TAMU Energy Conference, 2022
8. “The Impact of Neglecting Climate Change and Variability on ERCOT’s Forecasts of Electricity Demand in Texas, AMS, 2022
9. “Evaluation of Dust Detection Using Multiple Machine Learning Algorithms Against Physics-Based Approach on Visible Infrared Imaging Radiometer Suite (VIIRS) data”, AGU, 2020
10. “Increased Heat Waves and Extremes with Associated Population Risk in a CO<sub>2</sub>-Warmed World”, AMS, 2020
11. “Analysis of Source Regions and Meteorological Factors for the Variability of Spring PM<sub>10</sub> Concentrations in Seoul, Korea”, KMS Fall Meeting, 2017

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### **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

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### **TECHNICAL PROFICIENCY**

- Proficient in Python and R
- Proficient in ML/DL Modules: TensorFlow, Keras, Scikit-Learn, XGBoost
- Proficient in Multiprocessing / HPC Modules: Dask, Multiprocessing, Xarray

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- Proficient in running E3SM Land Model (ELM) (<https://jangholee.com/e3sm-elm-documentation/>)

## **RESIDENTIAL STATUS**

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