Jangho Lee

CROCUS Postdoctoral Researcher at University of Illinois Chicago
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SCIENTIFIC PROFILES

- Google Scholar: https://scholar.google.com/citations?user=wBEE2YAAAAAJ
- ORCID: https://orcid.org/0000-0002-8942-1092

RESEARCH INTERESTS

Urban Climate, Climate Informatics, Climate Impact, Downscaling, Land-Vegetation-Atmosphere Modelling (E3SM & ELM), Remote Sensing, ML/DL, Atmospheric Data Analysis

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

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
- 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

PUERTRO 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

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

Drill Sergeant at Korea Army Training Center (KATC)

- Trained 4000+ new incoming soldiers

PEER-REVIEWED 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*, [Under Review]

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_2-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.

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 CO2-Warmed World", AMS, 2020

11. "Analysis of Source Regions and Meteorological Factors for the Variability of Spring PM10 Concentrations in Seoul, Korea", KMS Fall Meeting, 2017

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 Modules: TensorFlow, Keras, Scikit-Learn, XGBoost
- Proficient in Multiprocessing / HPC Modules: Dask, Multiprocessing, Xarray
- Proficient in running E3SM Land Model (ELM) (https://jangholee.com/e3sm-elm-documentation/)

RESIDENTIAL STATUS

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