

# Chaehyeong Lee

Boulder, Colorado, US

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## Research Interests

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Ocean dynamics and climate sciences: ocean heat budget; ocean's role in climate systems.  
Geofluid dynamics: upper-ocean mixing processes in the frequency domain.

## Education

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### University of Colorado Boulder

*Ph.D. in Atmospheric and Oceanic Sciences*

Advisors: Dr. Donata Giglio & Dr. Aneesh Subramanian

**Boulder, CO, US**

Aug. 2024 – present

### Yonsei University

*M.S. in Atmospheric Sciences*

Advisor: Dr. Hajoon Song

**Seoul, Rep. of Korea**

Mar. 2022 – Aug. 2023

### Yonsei University

*B.S. in Atmospheric Sciences*

**Seoul, Rep. of Korea**

Mar. 2016 – Feb. 2022

## Publications

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### In Progress

Lee, C., Giglio, D., & Subramanian, A. C. *Assessing the impact of sea surface salinity assimilation on extreme event prediction in NASA GEOS-S2S v2 model.*

Lee, C., Giglio, D., & Subramanian, A. C. *Bridging gaps in the upper-ocean heat budget between observations and climate models: a frequency-domain perspective.*

### Published

Lee, C., Song, H., Choi, Y., Cho, A., & Marshall, J. (2025). Observed multi-decadal increase in the surface ocean's thermal inertia. *Nature Climate Change*, 1–7. doi:10.1038/s41558-025-02245-w

## Research Experience

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### Giglio's Research Group, CU Boulder

*Research Assistant*

**Boulder, CO, USA**

Aug. 2024 – present

Developing methods to improve NASA GEOS-S2S v2 simulations via sea-surface salinity assimilation; Filling gaps in upper-ocean mixing processes between observations and models through frequency-domain analysis.

### Air-Sea Modeling Lab, Yonsei University

*Research Assistant*

**Seoul, Rep. of Korea**

Dec. 2020 – Aug. 2024

Analyzed changes in the upper-ocean thermal state using SST observations; examined hysteresis of thermal memory under CESM 4×CO<sub>2</sub> experiments.

## Awards & Scholarships

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**2025:** ATOC Fellowship (4000 USD), Department of Atmospheric and Oceanic Sciences, University of Colorado Boulder

- 2025:** Academic Research Grants (GCP research credits ~ 1000 USD), Google LLC
- 2024:** Outstanding Thesis Award, Yonsei University Graduate School, Yonsei University
- 2022–2023:** Full tuition merit scholarship (for the top 2 graduate students), Yonsei University
- 2022:** High Honors for academic performance, Yonsei University
- 2020–2021:** Jilli Scholarship (2.3M KRW) for academic performance, Yonsei University

## Patent

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Song, H., & **Lee, C.** (2025). *Evaluation system and method of persistence of SST anomalies using autocorrelation coefficient and arctangent regressive model*. Rep. of Korea Patent #KR1028135790000. doi:10.8080/1020220157159

## Invited Talk

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<b>NASA Salinity Telecon</b> <i>Assessing the Impact of Satellite Sea Surface Salinity Assimilation on Vertical Structure of the Upper Ocean in the NASA GEOS-S2S 2.</i>	<b>Virtual Meeting</b> Dec. 2025
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## Conferences

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<b>OSM Meeting 2026 (poster)</b> <i>Assessing the Impact of Satellite Sea Surface Salinity Assimilation on the Upper Ocean Thermal State in the NASA GEOS S2S-v2 Model.</i> <b>Lee, C.</b> , Giglio, D., & Subramanian, A. C.	<b>Glasgow, Scotland</b> Feb. 2026
<b>AGU Fall Meeting (poster)</b> <i>The increasing trend of persistence of sea surface temperature in the past 40 years.</i> <b>Lee, C.</b> , Song, H., Cho, A., & Tak, Y.	<b>Chicago, IL, USA</b> Dec. 2022
<b>Korean Society of Oceanography Spring Conference (talk)</b> <i>Increasing persistence of SST anomalies and duration of marine heatwaves.</i> <b>Lee, C.</b> , Song, H., Cho, A., & Tak, Y.	<b>Jeju, Rep. of Korea</b> Jun. 2022

## Workshops

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<b>User Training for the Glosea 6 Climate Prediction Model</b> <i>Organized by the Korea Meteorological Administration</i>	<b>Jeju, Rep. of Korea</b> Jan. 2022
<b>Deep Learning Training: Fundamentals of Deep Learning</b> <i>NVIDIA Deep Learning Institute</i>	<b>Gonju, Rep. of Korea</b> Jan. 2022

## Service

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**Peer Reviewer:** *Journal of Climate*

## Technical Skills

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- Programming:** Python (xarray, dask, Pangeo), Julia (Oceananigans)
- HPC:** Parallel/distributed computing, NCAR Casper/Derecho clusters
- Tools:** Git, Linux shell scripting, LaTeX