

Chaehyeong Lee

Boulder, Colorado, USA

✉ +1 (303) 258-6841 • ✉ Chaehyeong.Lee@colorado.edu

🌐 sites.google.com/yonsei.ac.kr/hyeong • 🌐 <https://orcid.org/0009-0005-3110-9839>

Research Interests

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

University of Colorado Boulder

Boulder, CO, USA

Ph.D. in Atmospheric and Oceanic Sciences

Aug. 2024 – present

Advisors: Dr. Donata Giglio & Dr. Aneesh Subramanian

Yonsei University

Seoul, Rep. of Korea

M.S. in Atmospheric Science

Mar. 2022 – Aug. 2023

Advisor: Dr. Hajoon Song

Yonsei University

Seoul, Rep. of Korea

B.S. in Atmospheric Science

Mar. 2016 – Feb. 2022

Publications

In Progress.....

Lee, C., Giglio, D., Subramanian, A. C., Han, W., Capotondi, A., Du, D., & Molod, A. *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

Giglio's Research Group, CU Boulder

Boulder, CO, USA

Research Assistant

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.

Climate Processes and Predictability Group, CU Boulder

Boulder, CO, USA

Research Assistant

Aug. 2024 – present

Air-Sea Modeling Lab, Yonsei University

Seoul, Rep. of Korea

Research Assistant

Dec. 2020 – Aug. 2024

Analyzed changes in the upper-ocean thermal state using SST observations; examined hysteresis of thermal memory under CESM 4×CO₂ experiments.

Teaching Experience

Data Science Laboratory, taught by Dr. Donata Giglio at CU Boulder Teaching Assistant	Boulder, CO, USA Spring 2026
Climate & Civilization, taught by Dr. Yign Noh at Yonsei Univ. Teaching Assistant	Seoul, Rep. of Korea Spring 2023
Physical Oceanography, taught by Dr. Hajoon Song at Yonsei Univ. Teaching Assistant	Seoul, Rep. of Korea Fall 2022

Awards & Scholarships

- 2025: ATOC Fellowship, Department of Atmospheric and Oceanic Sciences, University of Colorado Boulder
2025: Academic Research Grants (GCP research credits), 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 for academic performance, Yonsei University

Patent

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 #1028135790000. doi:10.8080/1020220157159

Invited Talk

NASA Salinity Telecon Virtual Meeting
Assessing the Impact of Satellite Sea Surface Salinity Assimilation on Vertical Structure of the Upper Ocean in the NASA GEOS-S2S 2. Dec. 2025

Conferences

OSM 2026 (poster) Glasgow, Scotland
Assessing the Impact of Satellite Sea Surface Salinity Assimilation on the Upper Ocean Thermal State in the NASA GEOS S2S-v2 Model. Feb. 2026
Lee, C., Giglio, D., & Subramanian, A. C.

AGU Fall Meeting (poster) Chicago, IL, USA
The increasing trend of persistence of sea surface temperature in the past 40 years. Dec. 2022
Lee, C., Song, H., Cho, A., & Tak, Y.

Korean Society of Oceanography Spring Conference (talk) Jeju, Rep. of Korea
Increasing persistence of SST anomalies and duration of marine heatwaves. Jun. 2022
Lee, C., Song, H., Cho, A., & Tak, Y.

Workshops

User Training for the Glosea 6 Climate Prediction Model Jeju, Rep. of Korea
Organized by the Korea Meteorological Administration Jan. 2022

Deep Learning Training: Fundamentals of Deep Learning Gonju, Rep. of Korea
NVIDIA Deep Learning Institute Jan. 2022

Service

Peer Reviewer: *Journal of Climate*

Technical Skills

Programming: Python (xarray, dask, Pangeo), Julia (Oceananigans)

HPC: Parallel/distributed computing, NCAR Casper/Derecho clusters

Tools: Git, Linux shell scripting, LaTeX