

Chaehyeong Lee

Boulder, Colorado, US

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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

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

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

Giglio's Research Group, CU Boulder

Research Assistant

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.

Boulder, CO, USA

Aug. 2024 – present

Climate Processes and Predictability Group, CU Boulder

Research Assistant

Boulder, CO, USA

Aug. 2024 – present

Air-Sea Modeling Lab, Yonsei University

Research Assistant

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

Seoul, Rep. of Korea

Dec. 2020 – Aug. 2024

Awards & Scholarships

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

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

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 Meeting 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