Chaehyeong Lee

Boulder, Colorado, US

☐ +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 science: ocean heat budget; the ocean's role in climate systems.

Geofluid dynamics: upper-ocean non-linear 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 Sciences   *Mar. 2022 – Aug. 2023*

Advisor: Dr. Hajoon Song

Yonsei University   **Seoul, Rep. of Korea**

B.S. in Atmospheric Sciences   *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 vertical structure of upper ocean in NASA GEOS-S2S v2 model.*

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 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 $4\times CO_2$ experiments.

Teaching Experience

Data Science Laboratory, taught by Dr. Donata Giglio at CU Boulder **Boulder, CO, USA**
Teaching Assistant *Spring 2026*

Climate & Civilization, taught by Dr. Yign Noh at Yonsei Univ. **Seoul, Rep. of Korea**
Teaching Assistant *Spring 2023*

Physical Oceanography, taught by Dr. Hajoon Song at Yonsei Univ. **Seoul, Rep. of Korea**
Teaching Assistant *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 *Dec. 2025*
the Upper Ocean in the NASA GEOS-S2S 2.

Conferences

OSM 2026 (poster) **Glasgow, Scotland**
Assessing the Impact of Satellite Sea Surface Salinity Assimilation on the Upper Ocean *Feb. 2026*
Thermal State in the NASA GEOS S2S-v2 Model.
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