

EN-CHI LEE

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SCHOOL College of Science, University of Arizona, Tucson, Arizona

 GitHub  ORCID  Website  LinkedIn

EDUCATION

2023–present **University of Arizona**, Tucson, Arizona
 Majors: Geophysics & Planetary Geoscience
 Minors: Mathematics & Oceanic and Atmospheric Sciences
 Expected graduation: May 2026

2022–2023 **National Taiwan University**, Taipei, Taiwan
 Major: Geosciences
 Transferred to the University of Arizona

RESEARCH EXPERIENCES & WORKSHOPS

2025–present **Senior independent study**
 Department of Geosciences, University of Arizona
 Mentor: Dr Amanda Hughes

- Generating geologically consistent synthetic seismic reflection data using numerical modeling.
- Evaluating the performance of machine learning methods in seismic interpretation using the synthetic data.

2025–present **Yin Climate Research Group**, Undergraduate researcher
 Department of Geosciences, University of Arizona
 Mentor: Dr Jianjun Yin

- Analysed tide gauge data and decomposed the relative contributions of different sea-level change mechanisms.
- Modeled the effect of atmospheric forcing on local sea-level changes.

2024–present **Arizona Polar Ice Lab**, Undergraduate researcher
 Department of Geosciences, University of Arizona
 Mentor: Dr Christopher Harig

- Developed codebase *ULMO* to analyse satellite and oceanographic data; used it to jointly estimate and model sea-level budgets in ocean basins.
- Showed that mismodeled glacial isostatic adjustment (GIA) is a significant source of discrepancy in previous sea level budget estimates.

2025 **Geology Field School**
 Department of Geosciences, University of Arizona
 Instructors: Dr Peter DeCelles, Dr Barbara Carrapa, & Dr Paul Kapp

- Studied and individually mapped several faults and related structures of the Sevier Thrust Belt and Laramide Orogeny.
- Constructed map-scale and orogeny-scale cross-sections to understand the tectonic evolution of the North American Cordillera.

2023

Dynamics and Modelling Laboratory, Undergraduate researcher
Department of Atmospheric Sciences, National Taiwan University
Mentor: Dr Hung-Chi Kuo

- Implemented an algorithm to solve for boundary layer dynamical adjustment numerically and similar PDE systems.
- Evaluated the performance of the Pangu AI model in forecasting typhoon development compared to numerical weather prediction; Showed the model was unstable and yielded nonphysical storm structures for longer forecasts.

2022

Seismology Skill Building Workshop, Participant
IRIS Consortium (now EarthScope)

- Participated in the self-motivated workshop with a 99% average score.
- Performed analysis using Shell scripts, SAC, and ObsPy to study the behaviours of seismic events, earthquake positioning, and waveforms.

PUBLICATIONS

- [4] Yin, J. & **E.-C. Lee** (2026). High-tide and storm-surge flooding along the U.S. East and Gulf Coasts. In preparation for *Journal of Climate*.
- [3] **Lee, E.-C.** & C. Harig (2025). The impact of GIA corrections on gravimetric basin-scale ocean mass budgets. Submitted to *JGR: Solid Earth*; preprint available on *EarthArXiv*. doi: [10.31223/X5RR16](https://doi.org/10.31223/X5RR16)
- [2] **Lee, E.-C.** (2025). Unified localisation of mass over oceans (ULMO) [Software]. *Zenodo*. doi: [10.5281/ZENODO.17625698](https://doi.org/10.5281/ZENODO.17625698)
- [1] **Lee, E.-C.** & C. Harig (2024). Investigating the variance of GIA corrections on gravimetric basin-scale ocean mass budgets [Abstract]. In: *AGU24 Annual Meeting*. ADS: [2024AGUFMG51B.3394L](https://ui.adsabs.org/2024AGUFMG51B.3394L)

SELECTED PRESENTATIONS

- May 2025 **Investigating the Variance of GIA Corrections on Gravimetric Basin-Scale Ocean Mass Budgets** (*talk*)
ACCESS Workshop, Northern Arizona University
- May 2025 **Geospatially Conditioned Diffusion for Worldbuilding and Fantasy Cartography** (*talk*)
Mathematics of Generative AI Course Project Showcase, University of Arizona
- Mar 2025 **Investigating the Variance of GIA Corrections on Gravimetric Basin-Scale Ocean Mass Budgets** (*talk*)
GeoDaze 2025, University of Arizona

- Dec 2024 **Investigating the Variance of GIA Corrections on Gravimetric Basin-Scale Ocean Mass Budgets** (*poster*)
AGU24 Annual Meeting, Washington, D.C.
- Sep 2024 **Estimating Basin-Scale Ocean Mass Budgets with Satellite Gravity** (*talk*)
McNair Scholar Research Conference, University of New Mexico
- Aug 2024 **Estimating Basin-Scale Ocean Mass Budgets with Satellite Gravity** (*talk & poster*)
Undergraduate Research Opportunities Consortium (UROC) Colloquium, University of Arizona
- May 2024 **Dust, Habitability, and the Evolution of the Martian Climate** (*talk*)
Geology of the Solar System Course Project Showcase, University of Arizona

EMPLOYMENT & SERVICE

- 2026–present **GEOS304 Structural Geology**, Preceptor
Department of Geosciences, University of Arizona
- Review weekly lecture material for the lab component of the course.
 - Assist in the lab instruction and provide real-time feedback to students.
- 2024–present **Arizona Journal of Interdisciplinary Studies**, Editor
University of Arizona
- Peer-reviewed and edited interdisciplinary research articles for publication.
 - Organised outreach events and showcase of published research.
- 2024 **AGU24 Annual Meeting**, Student volunteer
Washington, D.C.

SELECTED HONOURS & DISTINCTIONS

- 2023–present **Scholarship for Students Participating in International Science Olympiads and International Science Exhibitions to Study Abroad**
Ministry of Education, Taichung, Taiwan
Awarded 30 000 USD/year to study abroad.
- 2023–present **Dean's List with Distinction**
University of Arizona, Tucson, Arizona
Awarded for a 4.0 GPA.
- 2023–2025 **Transfer Global Wildcat Award**
University of Arizona, Tucson, Arizona
Awarded 11 000 USD/year for outstanding academic performance.
- 2022–2023 **Fu Bell Scholarship**
National Taiwan University, Taipei, Taiwan
Awarded 200 000 NTD/year for outstanding academic performance.

2022–2023 **Presidential Award**
National Taiwan University, Taipei, Taiwan
Awarded for maintaining a top 5% GPA within the department.

PROFESSIONAL AFFILIATIONS & MEMBERSHIPS

2024–present **American Geophysical Union**, Member

2023–present **Arizona Science, Engineering, and Mathematics Scholars (ASEMS)**, Scholar

2022–present **Seismological Society of America**, Member