KUAN-FU FENG

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EDUCATION

PhD *Geosciences, National Taiwan University, Taiwan* *Sep 2017 - Jan 2022*

Master *Geosciences, National Taiwan University, Taiwan* *Sep 2014 - Jun 2016*

Bachelor *Earth and Environmental Sciences, National Chung Cheng University, Taiwan* *Sep 2010 - Jan 2014*

PROFESSIONAL EXPERIENCE

Postdoctoral Research Associate

University of Utah, USA *Dec 2024 - present*

- Applied time series analysis to geophysical datasets for subsurface monitoring, integrating multi-scale geophysical datasets.
- Integrating inversion workflows with environmental datasets to improve hydrogeophysical model accuracy.

Postdoctoral Scholar

University of Washington, USA *Jun 2023 - Nov 2024*

- Developed data-driven models linking near-surface seismic changes to groundwater–surface interactions.
- Contributed code and testing to an open-source environmental seismology toolkit, improving functionality and performance.
- Assisted in delivering practical workshops on cloud computing, promoting scalable seismic data processing using AWS.

Postdoctoral Scholar *Fellowship supported*

University of Utah, USA *Jun 2022 - May 2023*

- Processed and analyzed over 10 TB of high-resolution ambient noise data for time-lapse velocity monitoring.
- Investigated the influence of ambient noise sources on seismic array performance at multiple scales.

Graduate Research Assistant (PhD)

National Taiwan University and Academia Sinica, Taiwan *Sep 2017 - Jan 2022*

- Performed time-frequency domain analysis on multi-year seismic datasets to track crustal property changes.
- Designed and implemented noise-based seismic monitoring systems for tectonic and hydrological studies.
- Analyzed earthquake sequences, rupture directivity, focal mechanisms, and velocity models to study seismogenic structures.
- Assisted with the deployment of portable and permanent seismic arrays in landslide-prone regions of Taiwan.

Research Assistant

Institute of Earth Sciences, Academia Sinica, Taiwan *Oct 2016 - Aug 2017*

- Maintained and tested Real-time Earthquake Moment Tensor Monitoring System.
- Constructed finite-fault models of subduction zone events using broadband waveform modeling.

Graduate Research Assistant (Master)

National Taiwan University, Taiwan *Sep 2014 - Jul 2016*

- Performed time-dependent crustal travel-time tomography and evaluated its abilities and limitations in revealing structural changes associated with moderate to large earthquakes.
- Conducted earthquake relocation and analyzed tectonic structures utilizing seismicity and focal mechanisms.

PEER-REVIEWED PUBLICATION

J=JOURNAL

[J.9] Kidiwela, M., et al. (2026) **Active Protothrusts and Fluid Highways: Seismic Noise Reveals Hidden Subduction Dynamics in Cascadia.** *Science Advances*.

[J.8] Feng, K.-F., et al. (2026) **A decadal survey of the near-surface seismic velocity response to hydrological variations in Utah, United States.** *Journal of Geophysical Research: Solid Earth*.

[J.7] Ni, Y., et al. (2025) **A Review of Cloud Computing and Storage in Seismology.** *Geophysical Journal International*.

[J.6] Denolle, M., et al. (2025) **Training the Next Generation of Seismologists: Delivering Research-Grade Software Education for Cloud and HPC Computing through Diverse Training Modalities.** *Seismological Research Letters*.

[J.5] Feng, K.-F., et al. (2021) **Controls on Seasonal Variations of Crustal Seismic Velocity in Taiwan Using Single-station Cross-component Analysis of Ambient Noise Interferometry.** *Journal of Geophysical Research: Solid Earth*.

[J.4] Feng, K.-F., et al. (2020) **Detecting Pre-eruptive Magmatic Processes of the 2018 Eruption at Kilauea, Hawaii Volcano with Ambient Noise Interferometry.** *Earth, Planets and Space*.

[J.3] Hsu, Y.-F., et al. (2020) **Evidence for Fluid Migration During the 2016 Meinong Taiwan Aftershock Sequence.** *Journal of Geophysical Research: Solid Earth*.

[J.2] Lee, S.-J., et al. (2018) **Composite Megathrust Rupture from Deep Interplate to Trench of the 2016 Solomon Islands Earthquake.** *Geophysical Research Letters*.

[J.1] Brown, D., et al. (2015) **Imaging High-pressure Rock Exhumation in Eastern Taiwan.** *Geology*.

SELECTED CONFERENCE PRESENTATION

C=CONFERENCE PRESENTATION

[C.1] **2024 Seismological Society of America (SSA) Meeting, Alaska, USA**
- Measuring Shallow Seismic Attenuation Across the Pacific Northwest of the United States Using Ambient Noise Seismology. Abstract S23C-0387 (Poster).

[C.2 & 3] **2023 American Geophysical Union (AGU) Fall Meeting, California, USA**
- A Decadal Survey of the Near-surface Seismic Velocity Response to Hydrological Variations in Utah, United States. Abstract H54C-06 (Oral).
- Investigating Seismic Attenuation Across the Pacific Northwest of the United States Using Ambient Noise. Abstract S23C-0387 (Poster).

[C.4] **2023 GAGE/SAGE 2023 Community Science Workshop, Pasadena, California, USA**
Investigating Seismic Velocity Response to Near-surface Hydrological Variations in Utah, United States. Abstract no. 100 (Poster).

[C.5] **2022 American Geophysical Union (AGU) Fall Meeting, Chicago, USA**
- Investigating Near-surface Hydrological Responses on Crustal Seismic Velocity Variations in Subtropical and Semi-arid Regions. Abstract S15D-0230 (Poster).

[C.6] **2022 The 5th Taiwan Earthquake Center (TEC) Annual Meeting, Taiwan**
- A Noise-Based Monitoring System of Crustal Seismic Velocity Changes in Taiwan. (Oral).

[C.7] **2021 American Geophysical Union (AGU) Fall Meeting, ONLINE**
- Assessment of controlling factors on seasonal variations of crustal seismic velocity in Taiwan using ambient noise single-station cross-component analysis. (Poster)

[C.8 & 9] **2020 Geological and Geophysical Annual Meeting, Taiwan**
- Single-station Cross-component Analysis of Ambient Noise Reveals Seasonal Crustal Seismic Velocity Variations in Taiwan. Abstract S3-O-02 (Oral).
- Co-seismic variations in crustal seismic velocity related to M6+ earthquakes in Taiwan. Abstract S3-PC-006 (Poster).

[C.10] **2019 American Geophysical Union (AGU) Fall Meeting, California, USA**
- Detection of a Precursory Phase of the 2018 Magma Eruption in the Lower East Rift Zone of Kilauea Volcano, Hawaii. Abstract 508923 (Oral).

[C.11] **2019 European Geosciences Union (EGU) Annual Meeting, Vienna, Austria**
- Detection of a precursory phase of the 2018 magma eruption in the Lower East Rift Zone of Kilauea volcano, Hawaii. Abstract: EGU2019-3322 (Poster).

[C.12] **2018 The 15th Asia Oceania Geosciences Society (AOGS) Meeting, Hawaii, USA**
- Near real-time monitoring system of the seismic velocity changes in Taiwan. Abstract SE03-A023 (Poster).

[C.13] **2017 American Geophysical Union (AGU) Fall Meeting, California, USA**
- Seismogenic structure in Chiayi area, Taiwan: Insight from the 2017 M_L 5.1 Zhongpu earthquake sequence. Abstract SP-074 (Poster).

[C.14] **2017 Geological and Geophysical Annual Meeting, Taiwan**
- Near real-time monitoring system of the seismic velocity changes in Taiwan. Abstract SP-074 (Poster).

[C.15] 2015 The 26th International Union of Geodesy and Geophysics (IUGG) General Assembly, Czech Republic
- Temporal changes of seismic velocity in crust associated with ML ¿ 6.0 earthquakes, Taiwan in recent years. Abstract S01bp-323. (Poster).

[C.16] 2015 European Geosciences Union (EGU) Annual Meeting, Vienna, Austria
- Imaging high-pressure rock exhumation along the arc-continent suture in eastern Taiwan. (Poster)

THESIS/DISSERTATION

T=THESIS, D=DISSERTATION

[D.1] Noise-based Monitoring on Crustal Seismic Velocity Variations. (2022) *PhD Dissertation. National Taiwan University*
Advisors: Dr. Hsin-Hua Huang and Dr. Yih-Min Wu

[T.1] Investigating the Uncertainty of Time-dependent Seismic Velocity Changes Using Travel-time Tomography: a Case Study of the M_L 6.4 2013 Rueisuei Earthquake, Taiwan. (2016) *Master Thesis. National Taiwan University*
Advisor: Dr. Yih-Min Wu

SERVICE & PROFESSIONAL ACTIVITIES

Peer-reviewer

Geophysical Research Letters (2)
Journal of Geophysical Research (5)
Nature Communications (1)
Earth, Planets and Space (1)
Tectonophysics (1)

Workshop instructor

Earth and Space Sciences, University of Washington *2024*
- Delivered workshop on Ambient Noise Seismology in the Cloud [SCOPED Workshop].
- Instructed Data Mining on the Cloud 101 at the Seismological Society of America Meeting [SSA Tutorials].

President, Graduate Student Association

Department of Geosciences, National Taiwan University *2018*
- Elected by peers to represent graduate students; served as a liaison between the department and the student body.
- Organized student forums and summer lectures for the department and institute to promote interdisciplinary engagement and discourse.

Summer Student Lecture Convener and Instructor

Institute of Earth Sciences, Academia Sinica, Taiwan *Summer 2018 and 2019*
- Managed logistics for an institute's summer lecture series aimed at undergraduate and early-career students.
- Designed and delivered instruction on earthquake seismology and time-series analysis for undergraduates.
- Coordinated multi-session lecture series, scheduling speakers and promoting student participation.

FIELD WORK EXPERIENCE

Nodal Seismic Array Deployment, Los Angeles Basin, USA. *2022*
Broadband Seismic Array Deployment, Chu-Lin and Lan-Tai Landslide Areas, Taiwan. *2018 and 2019*

GRANT AND HONOR

Grants

2023 GAGE/SAGE 2023 Community Science Workshop Travel Grant
2022 Postdoctoral Research Abroad Fellowship, Ministry of Science and Technology, Taiwan
2021 Professor Yi-Ben Tsai Graduate Student Scholarship, Chinese Taipei Geophysics Society, Taiwan
2019 Travel Grant for attending international conferences, Academia Sinica, Taiwan
2019 Travel Grant for attending international conferences, Chinese Taipei Geophysics Society
2018 Travel Grant for attending international conferences, Ministry of Science and Technology, Taiwan
2015 Travel Grant for attending international conferences, Ministry of Science and Technology, Taiwan
2013 Excellent Student Scholarship, Chinese Taipei Geophysical Society
2012 Outstanding Student Scholarship, National Chung Cheng University
2011 Outstanding Student Scholarship, National Chung Cheng University
2010 Outstanding Student Entrance Scholarship, National Chung Cheng University

Honor

2023 Professor Weizhou Ruan Memorial Fund Dissertation Award, Geological Society Located in Taipei
2022 Phi Tau Phi Scholastic Honor Society Membership of the Republic of China (Taiwan)
2022 Dean's Award, College of Science, National Taiwan University
2019 Outstanding Student Paper Awards in International Conferences, Earth Science Research Promotion Center, Taiwan
2019 Invited Talk, Workshop on Frontiers in Seismic Interferometry, Institute of Earth Sciences, Academia Sinica, Taiwan

SKILL

Software Engineering	Linux/Unix, Git/GitHub, Jupyter notebook, Visual Studio Code
Programming Languages	Python, Fortran, C, C++, Bash Script
Scientific/Technical Skills	Time series analysis, Signal processing, Inversion methods, Statistical analysis, Seismic phase picking, Focal mechanism analysis, Coulomb 3 Software
Data visualization	ParaView, Matplotlib, Seaborn, Adobe Illustrator
Cloud/HPC Environment	AWS (S3, EC2, Jupyter), parallel scripting, workflow automation

OTHER PUBLICATION

- Pre-eruptive magmatic processes of the 2018 Magma Eruption in the Lower East Rift Zone of Kilauea Volcano, Hawaii. *Taiwan Earthquake Research Center, Newsletter Press 29.*