

# Qibin Shi

*Earthquake physics, soil hydrodynamics, AI for seismology*

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## (a) Education

Nanyang Technological University	Singapore	Geophysics	Ph.D., 2021 (December)
Nanjing University	Nanjing, China	Geology	B.Sc., 2016 (July)

## (b) Professional Experience

2025 – present	Pan Postdoctoral Fellow	Rice University
2022 – 2024	Postdoctoral Scholar	University of Washington

## (c) Publications

*Most closely related* (\* indicates the corresponding author,  $\diamond$  indicates the student advisee)

1. **Qibin Shi\***, David R Montgomery, Abigail LS Swann, Nicoleta C Cristea, Ethan Williams, Nan You, Joe Collins, Ana Prada Barrio, Simon Jeffery, *et al.*, Agroseismology: unraveling the impact of farming practices on soil hydrodynamics, [arXiv:2509.09821](https://arxiv.org/abs/2509.09821), Accepted by *Science* (2025).
2. Xinzhong Yin $\diamond$ , **Qibin Shi\***, Wenze Deng, Yingfeng Zhang, Zhangfeng Ma, Xiaoshu Li, Jiuhui Chen, Jinrong Su, and Shengji Wei, Concentrated rupture of the 2022  $M_w$ 6.6 luding earthquake bounded by stress and geometry barriers, *Bulletin of the Seismological Society of America* (2025).
3. **Qibin Shi\***, Ethan F Williams, Bradley P Lipovsky, Marine A Denolle, William SD Wilcock, Deborah S Kelley, and Katelyn Schoedl, Multiplexed distributed acoustic sensing offshore central oregon, *Seismological Research Letters* **96**, 784–800 (2025).
4. **Qibin Shi\***, Marine A Denolle, Yiyu Ni, Ethan F Williams, and Nan You, Denoising offshore distributed acoustic sensing using masked auto-encoders to enhance earthquake detection, *Journal of Geophysical Research: Solid Earth* **130**, e2024JB029728 (2025).
5. **Qibin Shi\*** and Marine A Denolle, Improved observations of deep earthquake ruptures using machine learning, *Journal of Geophysical Research: Solid Earth* **128**, e2023JB027334 (2023).
6. **Qibin Shi** and Shengji Wei\*, Multiple point source inversion with regional broadband and local waveform data—a case study of the 2016  $M_w$ 7.1 kumamoto, Japan earthquake, *Chinese Journal of Geophysics* **64**, 4378–4393 (2021).
7. **Qibin Shi\*** and Shengji Wei, Highly heterogeneous pore fluid pressure enabled rupture of orthogonal faults during the 2019 ridgecrest  $M_w$ 7.0 earthquake, *Geophysical Research Letters* **47**, e2020GL089827 (2020).
8. **Qibin Shi**, Sylvain Barbot\*, Shengji Wei, Paul Tapponnier, Takanori Matsuzawa, and Bunichiro Shibasaki, Structural control and system-level behavior of the seismic cycle at the nankai trough, *Earth, Planets and Space* **72**, 27 (2020).
9. **Qibin Shi**, Shengji Wei\*, and Meng Chen, An mcmc multiple point sources inversion scheme and its application to the 2016 kumamoto  $M_w$ 6.2 earthquake, *Geophysical Journal International* **215**, 737–752 (2018).
10. Teng Wang, **Qibin Shi**, Mehdi Nikkhoo, Shengji Wei, Sylvain Barbot, Douglas Dreger, Roland Bürgmann, Mahdi Motagh, and Qi-Fu Chen, The rise, collapse, and compaction of mt. mantap from the 3 september 2017 north korean nuclear test, *Science* **361**, 166–170 (2018).
11. Shengji Wei, Xin Wang, Chenglong Li, Hongyu Zeng, Zhangfeng Ma, **Qibin Shi**, Han Chen, Yihe Huang, Mingzhe Lyu, Jiangtao Liao, *et al.*, Supershear rupture sustained through a thick fault zone in the 2025  $M_w$ 7.8 mandalay earthquake, *Science* **390**, 468–475 (2025).

### ***Other significant publications***

12. Marine A. Denolle\*, **Qibin Shi**, Tim Clements, Loïc Viens, Veronica Rodriguez-Tribaldos, and Fabrice Cotton, Ambient field seismology in critical zone hydrological sciences, *Comptes Rendus Géoscience* **1**, 000–000 (2025), early view; Sciences de la Planète.
13. Yiyu Ni, Marine A Denolle, **Qibin Shi**, Bradley P Lipovsky, Shaowu Pan, and J Nathan Kutz, Wavefield reconstruction of distributed acoustic sensing: Lossy compression, wavefield separation, and edge computing, *JGR: Machine Learning and Computation* **1**, e2024JH000247 (2024).
14. Heng Luo, Hongyu Zeng, **Qibin Shi**, Teng Wang, Mingsheng Liao, Jiashun Hu, and Shengji Wei, Could thermal pressurization have induced the frequency-dependent rupture during the 2019  $M_w$ 8.0 peru intermediate-depth earthquake?, *Geophysical Journal International* **232**, 115–127 (2023).
15. Shengji Wei, Hongyu Zeng, **Qibin Shi**, Jihong Liu, Heng Luo, Wanlin Hu, Yu Li, Weitao Wang, Zhangfeng Ma, Jing Liu-Zeng, *et al.*, Simultaneous rupture propagation through fault bifurcation of the 2021  $M_w$ 7.4 maduo earthquake, *Geophysical Research Letters* **49**, e2022GL100283 (2022).
16. Irwan Meilano, Rino Salman, Suchi Rahmadani, **Qibin Shi**, Susilo Susilo, Eric Lindsey, Pepen Supendi, and Daryono Daryono, Source characteristics of the 2019  $M_w$ 6.5 ambon, eastern indonesia, earthquake inferred from seismic and geodetic data, *Seismological Society of America* **92**, 3339–3348 (2021).

#### **(d) Grants and Awards**

2024 Pan Postdoc Fellowship, Earth, Environment, and Planetary Sciences, Rice University (\$7k)  
2019 Dr. Stephen Riady Geoscience Research Grant, Earth Observatory of Singapore (\$15k)

#### **(e) Mentoring Experience**

2023-present Mentor of undergrad student Hiroto Bito, University of Washington (paper in prep.)  
2023-present Mentor of student Xinzhong Yin, Earth Observatory of Singapore (published)

#### **(f) Teaching Experience**

2023 Guest Lecturer, *Plate Tectonics* (Marine Denolle), University of Washington  
2022 Guest Lecturer, *Machine Learning* (Marine Denolle), University of Washington  
2019 Teaching Assistant, *Scientific Writing* (Pavel Adamek), NTU  
2019 Teaching Assistant, *Natural Hazards & Society* (Kerry Sieh & Shengji Wei), NTU  
2019 Instructor, Seismological Workshop, Naypyidaw, Myanmar  
2018 Instructor, Seismological Workshop, Aceh, Indonesia  
2015 Instructor, Summer camp in an under-resourced community, Anhui, China

#### **(g) Invited Talk**

TAMU  
EGU 2026  
TAMU

#### **(h) Academic Service**

##### ***Journal Reviews***

- Earth and Space Science
- Earth, Planets and Space
- Geophysical Journal International
- Geophysical Research Letters
- Geoscience Letters
- Journal of Geophysical Research: Solid Earth
- Science
- Seismica
- Seismological Research Letters
- Journal of the Acoustical Society of America
- Bulletin of the Seismological Society of America
- IEEE Transactions on Geoscience and Remote Sensing

### *Conferences*

- Session convener at the American Geophysical Union Fall Meeting, 2025
- Session convener at the Seismological Society of America Annual Meeting, 2026