Jintao Li

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Zhejiang University, Hangzhou, Zhejiang, China

Experience

2025–Present **Postdoctoral Researcher**, Zhejiang University
Advisor: Prof. Weichang Li

Education

2020–2025 **Ph.D.**, Geophysics, University of Science and Technology of China
Advisor: Prof. Xinming Wu
Thesis: *High-Resolution Post-Stack Seismic Data Processing and Applications Using Deep Learning*

2016–2020 **B.Sc.**, Geophysics, University of Science and Technology of China

Research Interests

- Machine Learning for Geophysics
- Foundation Models for Distributed Acoustic Sensing (DAS) and Seismic
- DAS data analysis
- Subsea Fiber-Optic Sensing & Marine Environment Monitoring
- Seismic Super-Resolution
- Seismic Interpretation and Inversion
- Geophysical Software

Publications

Google Scholar
$*$ → Equal contribution, † → corresponding author

Published Papers

1. **Li, Jintao**, Wu, X., Zhang, X., Du, X., Sun, X., Deng, B. & Wang, G. High-Fidelity Seismic Super-Resolution Using Prior-Informed Deep Learning with 3D Awareness. *IEEE Transactions on Image Processing* (2026).
   – **CCF-A, IF: 13.7**.

2. **Li, Jintao** & Wu, X. Memory-Efficient Full-Volume Inference for Large-Scale 3D Dense Prediction without Performance Degradation. *Communications Engineering* (2026).
   – **Nature Portfolio**
   – **This paper was unanimously recognized by all three reviewers**.
3. **Li, Jintao**, Shi, Y. & Wu, X. CIGVis: An open-source Python tool for the real-time interactive visualization of multidimensional geophysical data. *GEOPHYSICS* **90** (2025).
4. **Li, Jintao**, Wu, X., Ye, Y., Yang, C., Hu, Z., Sun, X. & Zhao, T. Unsupervised contrastive learning for seismic facies characterization. *Geophysics* **88,** WA81–WA89 (2023).
5. **Li, Jintao**, Wu, X. & Hu, Z. Deep Learning for Simultaneous Seismic Image Super-Resolution and Denoising. *IEEE Transactions on Geoscience and Remote Sensing* **60,** 1–11 (2022).
   – **ESI Highly Cited Paper**.
6. Sheng, H., Wu, X., Si, X., **Li, Jintao**, Zhang, S. & Duan, X. Seismic foundation model: A next generation deep-learning model in geophysics. *Geophysics* **90,** IM59–IM79 (2025).
7. Han, L., Wu, X., Hu, Z., **Li, Jintao** & Fang, H. MAMCL: Multi-attributes Masking Contrastive Learning for explainable seismic facies analysis. *Computers & Geosciences* **193,** 105731 (2024).

Under Revision and Preprints

1. Wang, Y., **Li, Jintao**†, Sun, X. & Wu, X. *Deep Learning-based Seismic Reflectivity Estimation using Labeled Synthetic Data Pre-training and Physics-guided Fine-tuning in Field Data* 2026.
   – **Moderate Revision @ Geophysics**.
2. Dou, Y., Wu, X., Bangs, N., Sethi, H., **Li**, J., Gao, H. & Guo, Z. *Geological Everything Model 3D: A Promptable Foundation Model for Unified and Zero-Shot Subsurface Understanding* ArXiv[Preprint]. 2026. https://arxiv.org/abs/2507.00419.
3. Sheng, H., Wu, X., Gao, H., Di, H., Fomel, S., Li, J. & Si, X. *On the workflow, opportunities and challenges of developing foundation model in geophysics* ArXiv[Preprint]. 2025. https://arxiv.org/abs/2504.17384.

Conference Abstracts and Presentations

1. **Li, Jintao**, Shi, Y. & Wu, X. *CIGVis: An Open-Source Python Tool for Real-Time Interactive Visualization of Multidimensional Geophysical Data* in *85th EAGE Annual Conference & Exhibition* **2024** (2024), 1–5.
2. Sheng, H., Wu, X., Si, X., **Li, Jintao**, Zhang, S. & Duan, X. *Seismic Foundation Model (SFM): All-Purpose Feature Extraction from Seismic Data for Diverse Geophysical Applications* in *85th EAGE Annual Conference & Exhibition* **2024** (2024), 1–5.
3. Si, X., Wu, X., **Li, Jintao**, Cui, X., Sheng, H., Gao, H., Li, Z. & Peng, Z. *Tuning into Earth's Voice: Leveraging Large Language Models for Earthquake Detection* in *AGU Fall Meeting Abstracts* **2024** (2024), S11B–3384.
4. **Li, Jintao**, Wu, X. & Hu, Z. *Deep learning for simultaneous seismic image super-resolution and denoising* in *SEG International Exposition and Annual Meeting* (2020), D031S058R002.

Tools & Software

- cigvis: A tool for visualizing multidimensional geophysical data.

- cigsegy: A tool for exchanging data between SEG-Y format and NumPy array inside Python environment.
- SeismicSuperResolution: A repository for the paper "Deep Learning for Simultaneous Seismic Image Super-Resolution and Denoising" (IEEE TGRS).
- torchseis: A repository for the paper "Memory-Efficient Full-Volume Inference for Large-Scale 3D Dense Prediction without Performance Degradation" (Communications Engineering).

Awards & Honors

2025	Outstanding Graduate of University of Science and Technology of China (USTC)
2024	PetroChina Scholarship
2021	**National Graduate Scholarship**
2021–2025	First-Class Academic Scholarship, USTC
2020	Outstanding Undergraduate Thesis Award, USTC
2019	National Endeavor Scholarship

Teaching

University of Science and Technology of China (USTC)

2023 Invited Lecturer, *Artificial Intelligence in Geophysics*
Delivered an independent **3-hour** module on **Python-based Scientific Data Visualization**.

2021 Lead Teaching Assistant, *Artificial Intelligence in Geophysics*
Coordinated 8 TAs; contributed to assignment design and grading rubrics.

Academic Service

Journal Reviewer

Geophysics; IEEE Transactions on Geoscience and Remote Sensing (TGRS); Scientific Reports; Computers & Geosciences; Journal of Geophysical Research: Machine Learning and Computation (JGR-MLC); IEEE Geoscience and Remote Sensing Letters (GRSL); Interpretation; Journal of Geophysics and Engineering (JGE).

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