

刘达伟 Dawei Liu, Ph.D.

阿尔伯塔大学 · 信号分析与成像组 (SAIG) 博士后研究员

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研究领域与主要成果

- **研究方向:** 压缩感知、张量分解、高性能计算与机器学习在高维地震数据处理与反演中的应用。
- **学术产出:** 近五年发表 SCI 期刊论文 36 篇，其中 22 篇为第一作者或通讯作者；h-index = 13。
- **学术服务:** 勘探地球物理权威期刊 *Geophysics* 副主编，IMAGE 国际会议分会主席。
- **科研经费:** 以项目负责人获批科研经费超过 380 万元人民币，包括国家科技重大专项子课题等。

工作经历

阿尔伯塔大学 (University of Alberta), 加拿大 博士后研究员 (SAIG)，导师: Mauricio D. Sacchi 教授 (<i>Geophysics</i> 前主编)	2023.11 – 2026.01
普渡大学 (Purdue University), 美国 博士后学者 (SGP)，导师: Yunyue Elita Li 教授 (Kauffman 奖获得者)	2022.11 – 2023.10
比亚迪股份有限公司, 深圳 研发工程师	2013.07 – 2015.07

教育背景

西安交通大学, 信息与通信工程, 博士 导师: 陈文超教授; 获博士研究生国家奖学金	2018.09 – 2022.09
阿尔伯塔大学, 地球物理, 联合培养博士生 导师: Mauricio D. Sacchi 教授	2020.01 – 2022.07
西安交通大学, 电子与通信工程, 硕士 导师: 陈文超教授	2015.09 – 2018.07
长安大学, 通信工程, 学士	2009.09 – 2013.06

学术服务与兼职

期刊编委 / 副主编:

- 副主编 (Associate Editor), *Geophysics* 2025 – 至今
- 副主编, 《石油地球物理勘探》 2025 – 至今
- 青年编委, 《中国石油勘探》 2025 – 至今
- 客座编辑 (Guest Editor), *Frontiers in Earth Science* 2024 – 2025
- 编委会成员: *Earth Science* 2025 – 至今
- 编委会成员: *PriMera Scientific Engineering* 2025 – 至今
- 编委会成员: *Geology Geophysics and Earth Science* 2023 – 至今

国际会议服务:

- 技术委员会审稿人, IMAGE (SEG/AAPG 年会) 2025
- 分会主席 (Session Chair), IMAGE 会议 2023, 2024

同行评审:

- 受邀为 *Geophysics, IEEE TGRS, IEEE GRSL, Surveys in Geophysics* 等期刊完成审稿 100+ 次。

主持科研项目

国家科技重大专项子课题 非常规油气藏双甜点预测 职责: 子课题负责人	经费: ￥2,800,000 2026.01 – 2031.12
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西安交通大学青年拔尖人才启动基金 职责: 项目负责人	经费: ￥1,000,000 2026.01 – 2032.12
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荣誉与奖励

- 优秀报告奖, 第四届全国地球科学研究生论坛, 西安 2024
- 最佳口头报告奖, SEG 塔里木超深油气勘探技术研讨会 2023
- 优秀口头报告奖, SEG 第四届国际数学地球物理研讨会 2021
- 博士研究生国家奖学金, 教育部 2020

代表性期刊论文 (* 为通讯作者)

共发表 SCI 期刊论文 36 篇, 其中 21 篇以第一作者或通信作者身份发表于西安交通大学最有国际影响力的学术期刊目录, 此处列出代表性论文:

1. **Dawei Liu**, Yijie He, Xiaokai Wang, Mauricio Sacchi, Wenchao Chen, Fei Li, Juan Chen, Yang Mu (2025). CycleGAN Integration of High-Resolution Crooked Lines into 3D Seismic Volumes. *Geophysics*, 90, V339–V356.
2. **Dawei Liu**, Qingfang Wang, Nan You, Mauricio Sacchi, Wenchao Chen (2025). Filling the Gap: Enhancing Borehole Imaging with Tensor Neural Network. *Geophysics*, 90, D71–D83.
3. **Dawei Liu**, Zhenyu Wang, Xiaokai Wang, Wenchao Chen (2025). Zero-Shot Denoising for DAS-VSP Data Based on Conditional Diffusion Probabilistic Models. *IEEE Transactions on Geoscience and Remote Sensing*, 63, 1–11.
4. **Dawei Liu**, Mauricio D. Sacchi, Wenchao Chen (2022). Efficient tensor completion methods for 5-D seismic data reconstruction: Low-rank tensor train and tensor ring. *IEEE Transactions on Geoscience and Remote Sensing*, 60, 1–17.
5. **Dawei Liu**, Wei Wang, Xiaokai Wang, Cheng Wang, Jiangyun Pei, Wenchao Chen (2020). Post-stack seismic data denoising based on 3D convolutional neural network. *IEEE Transactions on Geoscience and Remote Sensing*, 58(3), 1598–1629.
6. **Dawei Liu**, Lei Gao, Xiaokai Wang, Wenchao Chen (2021). A dictionary learning method with atom splitting for seismic footprint suppression. *Geophysics*, 86, V509–V523.
7. **Dawei Liu**, Wenbin Gao, Weiwei Xu, Ji Li, Xiaokai Wang, Wenchao Chen (2024). 5-D seismic data interpolation by continuous representation. *IEEE Transactions on Geoscience and Remote Sensing*, 62, 1–11.

8. **Dawei Liu**, Mei Zhou, Xiaokai Wang, Zhensheng Shi, Mauricio D. Sacchi, Wenchao Chen, Zhao-dan Liu, Xian Wang (2024). Enhancing ground penetrating radar (GPR) data resolution through weakly supervised learning. *IEEE Transactions on Geoscience and Remote Sensing*, 62, 1–13.
9. **Dawei Liu**, Wenli Niu, Xiaokai Wang, Mauricio D. Sacchi, Wenchao Chen, Cheng Wang (2023). Improving vertical resolution of vintage seismic data by a weakly supervised method based on CycleGAN. *Geophysics*, 88, V445–V458.
10. **Dawei Liu**, Xiaokai Wang, Xiaohai Yang, Haibo Mao, Mauricio D. Sacchi, Wenchao Chen (2022). Accelerating seismic scattered noise attenuation in OVT domain: Application of deep learning. *Geophysics*, 87, V505–V519.
11. **Dawei Liu**, Xiangfang Li, Wei Wang, Xiaokai Wang, Zhensheng Shi, Wenchao Chen (2022). Eliminating harmonic noise in vibroseis data through sparsity-promoted waveform modeling. *Geophysics*, 87, V183–V191.
12. **Dawei Liu**, Zheyuan Deng, Cheng Wang, Xiaokai Wang, Wenchao Chen (2022). An unsupervised deep learning method for denoising prestack random noise. *IEEE Geoscience and Remote Sensing Letters*, 19, 1–5.
13. **Dawei Liu**, Lei Gao, Xiaokai Wang, Wenchao Chen (2021). A dictionary learning method with atom splitting for seismic footprint suppression. *Geophysics*, 86, V509–V523.
14. Wenbin Gao, **Dawei Liu***, Wenchao Chen, Mauricio D. Sacchi, Xiaokai Wang (2025). NeRSI: Neural implicit representations for 5D seismic data interpolation. *Geophysics*, 90, V29–V42.
15. Ji Li, **Dawei Liu***, Daniel Trad, Mauricio Sacchi (2024). Robust seismic data denoising via self-supervised deep learning. *Geophysics*, 89, V437–V451.
16. Ji Li, **Dawei Liu***, Daniel Trad, Mauricio Sacchi (2024). Robust unsupervised 5D seismic data reconstruction on both regular and irregular grids. *Geophysics*, 89, V537–V549.
17. Ji Li, **Dawei Liu*** (2024). Robust multi-dimensional reconstruction via group sparsity with Radon operators. *Geophysics*, 89, V219–V230.

代表性会议论文

共发表/报告会议论文 16 篇，此处列出部分代表性工作：

1. **Dawei Liu**, Mauricio D. Sacchi, Yijie He, Xiaokai Wang, Wenchao Chen, Fei Li, Juan Chen, Yang Mu (2025). Improving 3D seismic resolution in the Loess Plateau: Leveraging 2D crooked-line gully survey through weak supervision. *AAPG/SEG Annual Meeting*.
2. **Dawei Liu**, Yunyue Elita Li, Sayan Mukherjee, Jiquan Wang (2023). Vehicle-induced road roughness evaluation via a roadside geophone. *AGU Fall Meeting Abstracts*.
3. **Dawei Liu**, Xiaohai Yang, Xiaokai Wang, Haibo Mao, Mauricio D. Sacchi, Wenchao Chen (2021). Deep learning for prestack strong scattered noise suppression. *SEG Technical Program Expanded Abstracts*.
4. **Dawei Liu**, Wenchao Chen, Mauricio D. Sacchi, Hongxu Wang (2020). Should we have labels for deep learning ground roll attenuation? *SEG Technical Program Expanded Abstracts*.
5. **Dawei Liu**, Wei Wang, Wenchao Chen, Xiaokai Wang, Yanhui Zhou, Zhensheng Shi (2018). Random noise suppression in seismic data: what can deep learning do? *SEG Annual Meeting*.

特邀学术报告

- 《高维地震数据的去噪与插值：从监督到无监督》
第二届智能地球物理年会 & 第五届国际数学地球物理会议，哈尔滨，2024 年。