

# 刘达伟

## 个人信息

性别: 男      出生年月: 1991 年 08 月  
住址: 陕西省西安市咸宁西路 28 号      邮编: 710049  
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## 研究领域

深度学习, 张量分解, 地震信号处理, 时频分析, 压缩感知

## 技能

Tensorflow, Pytorch, Python, GPU, CUDA, Matlab, and MPI

## 工作经历

- |                             |        |         |  |
|-----------------------------|--------|---------|--|
| ● 2022 年 11 月 – 2023 年 11 月 | 博士后研究员 | 地震信号处理  | 导师: Prof. Yunyue Elita Li<br>普渡大学 (美国) |
| ● 2013 年 7 月 – 2015 年 7 月   | 总线工程师  | 汽车工程研究院 | 比亚迪汽车有限公司                              |

## 教育背景

- |                           |         |          |           |  |
|---------------------------|---------|----------|-----------|--|
| ● 2018 年 9 月 – 2022 年 9 月 | 博士研究生   | 信息与通信工程  | 电子与信息学部   | 导师: 陈文超教授<br>西安交通大学                    |
| ● 2020 年 1 月 – 2022 年 7 月 | 联合培养博士生 | 地震信号处理方向 | 物理系       | 导师: Mauricio D. Sacchi<br>阿尔伯塔大学 (加拿大) |
| ● 2015 年 9 月 – 2018 年 7 月 | 硕士研究生   | 电子与通信工程  | 电子与信息工程学院 | 导师: 陈文超教授<br>西安交通大学                    |
| ● 2009 年 9 月 – 2013 年 7 月 | 本科生     | 通信工程     | 信息工程学院    | 毕设导师: 吴潜蛟教授<br>长安大学                    |

## 已发表期刊论文 15 篇, 其中 11 篇一作/通讯

1. **Dawei Liu**, Mauricio D. Sacchi, Xiaokai Wang, and Wenchao Chen, (2023), "Unsupervised deep learning for ground roll and scattered noise attenuation," IEEE Transactions on Geoscience and Remote Sensing, 1-17. (一区 SCI, IF=8.138, 一作)
2. **Dawei Liu**, Wenli Niu, Xiaokai Wang, Mauricio D. Sacchi, Wenchao Chen, and Cheng

Wang, (2023), "Improving vertical resolution of vintage seismic data by a weakly supervised method based on Cycle GAN," *Geophysics*, 88: 1-103. (二区 SCI, IF=3.322, 一作)

3. **Dawei Liu**, Wei Wang, Xiaokai Wang, Zhensheng Shi, Mauricio Sacchi, and Wenchao Chen, "Improving sparse representation with deep learning: a workflow for separating strong background interference," *Geophysics*, vol. 88, pp. WA253-WA266, 2023. (二区 SCI, IF=3.322, 一作)

4. **Dawei Liu\***, Mauricio Sacchi, and Wenchao Chen, "Efficient tensor completion methods for 5D seismic data reconstruction: Low-rank tensor train and tensor ring," *IEEE Transactions on Geoscience and Remote Sensing*, vol. 60, pp. 1-17, 2022. (一区 SCI, IF= 8.138, 一作和通讯)

5. Weiwei Xu, Yanhui Zhou, **Dawei Liu**, Xiaokai Wang, and Wenchao Chen, "Seismic Intelligent Deblending via Plug and Play Method With Blended CSGs Trained Deep CNN Gaussian Denoiser," *IEEE Transactions on Geoscience and Remote Sensing*, vol. 60, pp. 1-13, 2022. (一区 SCI, IF= 8.138, 三作)

6. **Dawei Liu**, Xiaokai Wang, Xiaohai wang, Haibo Mao, Mauricio Sacchi, and Wenchao Chen, "Accelerating seismic scattered noise attenuation in OVT domain: application of deep learning," *Geophysics*, vol. 87, pp. V505-V519, 2022. (二区 SCI, IF=3.322, 一作)

7. **Dawei Liu**, Haoqi Zhang, Xiaokai Wang, Wenchao Chen, Zhensheng Shi, and Zhonghua Zhao, (2022), "Separation of seismic multiple reflection-refraction based on morphological component analysis with high-resolution linear Radon transform," *Geophysics*, vol. 87, pp. V367-V379, 2022. (二区 SCI, IF=3.322, 一作)

8. **Dawei Liu**, Xiangfang Li, Wei Wang, Xiaokai Wang, Zhensheng Shi, and Wenchao Chen, (2022), "Eliminating harmonic noise in vibroseis data through sparsity promoted waveform modeling," *Geophysics*, 87: V183-V191. (二区 SCI, IF=3.322, 一作)

9. Xiaokai Wang, Zhizhou Huo, **Dawei Liu**, Weiwei Xu, and Wenchao Chen, (2022), "A common-reflection-point gather random noise attenuation method based on the synchrosqueezing wavelet transform," *Interpretation*, 10, SA59-SA67. (四区 SCI, IF=1.201, 三作)

10. Xiaokai Wang, **Dawei Liu\***, and Wenchao Chen, "Accelerating seismic dip estimation with deep learning," *IEEE Geoscience and Remote Sensing Letters*, vol. 19, pp. 1-5, 2022. (二区 SCI, IF= 5.357, 通讯作者)

11. **Dawei Liu**, Lei Gao, Xiaokai Wang, and Wenchao Chen, (2021), "A dictionary learning method with atom splitting for seismic footprint suppression," *Geophysics*, 86, V509-V523. (二区 SCI, IF=3.322, 一作)

12. Yanglijiang Hu, **Dawei Liu**, Xiaokai Wang, Zhonghua Zhao and Wenchao Chen, "Attenuation of the multiple reflection-refraction in 2-d common-shot gather via random-derangement-based fx cadzow filter," *IEEE Geoscience and Remote Sensing Letters*, vol. 19, pp. 1-5, 2022. (二区 SCI, IF= 5.357, 二作)

13. **Dawei Liu**, Zheyuan Deng, Cheng Wang, Xiaokai Wang and Wenchao Chen, "An

unsupervised deep learning method for denoising prestack random noise," IEEE Geoscience and Remote Sensing Letters, vol. 19, pp. 1-5, 2022. (二区 SCI, IF= 5.357, 一作)

14. 陈文超, 刘达伟, 魏新建, 王晓凯, 陈德武, 李书平, 李冬, “基于地震资料有效信息约束的深度网络无监督噪声压制方法,” 煤田地质与勘探, vol. 49, pp. 249-256, 2021. (EI 中文核心期刊, IF= 1.116, 导师一作本人二作)

15. Dawei Liu, Wei Wang, Xiaokai Wang, Cheng Wang, Jiangyun Pei and Wenchao Chen, "Poststack seismic data denoising based on 3-d convolutional neural network," IEEE Transactions on Geoscience and Remote Sensing, vol. 58, no. 3, pp. 1598-1629, 2020. (一区 SCI, IF= 8.138, 一作)

## 在审文章

1. Ji Li, and Dawei Liu\*, (2023), "Robust multi-dimensional reconstruction via Group Sparsity with Radon operators," IEEE Transactions on Geoscience and Remote Sensing. (大修已提交, 通信作者)

2. Dawei Liu, and Elita Yunyue Li, (2023), " Road Roughness Estimation From Vehicle-Induced Signals via a Single Roadside Geophone Monitoring" Geophysical Research Letters. (提交中, 一区 SCI, 一作)

## 会议文章(5 篇一作 EI)

1. Wenbin Gao, Liu, Dawei, Xiaokai Wang, Zhensheng Shi, and Wenchao Chen, “Denoising prestack random noise with deep generative prior,” 7th International Conference on Intelligent Computing and Signal Processing (ICSP), pp. 262-265, 2022. (二作)

2. Dawei Liu, Xiaohai Yang, Xiaokai Wang, Haibo Mao, Mauricio D. Sacchi, and Wenchao Chen, (2021), "Deep learning for prestack strong scattered noise suppression," SEG Technical Program Expanded Abstracts : 1601-1605. (EI, 一作)

3. Haoqi Zhang, Dawei Liu, Xiaokai Wang, and Wenchao Chen, (2021), "Attenuation of multiple reflection-refraction in tau-p domain via morphological component analysis," SEG Technical Program Expanded Abstracts : 2974-2978. (EI, 二作)

4. Qinlong Hou, Dawei Liu, Xiaokai Wang, and Wenchao Chen, (2021), "Adaptive DAS coupling noise suppression based on local MCA," SEG Technical Program Expanded Abstracts : 2979-2983. (EI, 二作)

5. Chen Zhao, Li Jiang, Xiaokai Wang, Dawei Liu, Zhensheng Shi, and Wenchao Chen, (2021), "Prestack seismic noise attenuation based on 3D CWT," SEG Technical Program Expanded Abstracts : 2834-2838. (EI, 四作)

6. Dawei Liu, Wenchao Chen, Mauricio D. Sacchi, and Hongxu Wang, (2020), "Should we have labels for deep learning ground roll attenuation?," SEG Technical Program Expanded Abstracts : 3239-3243. (EI, 一作)

7. Dawei Liu, Zheyuan Deng, Xiaokai Wang, Wei Wang, Zhensheng Shi, Cheng Wang, and Wenchao Chen, (2020), "Must we have labels for denoising seismic data based on deep

learning?," SEG Global Meeting Abstracts : 31-35.

8. **Dawei Liu**, Xiaokai Wang, Zhensheng Shi, Yanhui Zhou, and Wenchao Chen, (2019), "A convolutional neural network for seismic dip estimation," SEG Technical Program Expanded Abstracts : 2634-2638. (EI, 一作)

9. **Dawei Liu**, Xiaokai Wang, Wenchao Chen, Yanhui Zhou, Wei Wang, Zhensheng Shi, Cheng Wang, and Chunlin Xie, (2019), "3D seismic waveform of channels extraction by artificial intelligence," SEG Technical Program Expanded Abstracts : 2518-2522. (EI, 一作)

10. **Dawei Liu**, Wei Wang, Wenchao Chen, Xiaokai Wang, Yanhui Zhou, Zhensheng Shi. Random noise suppression in seismic data: what can deep learning do? [C].2018 SEG Annual Meeting, 2018. [Cited by Professor Öz Yilmaz in his new book: *Land seismic case studies for near-surface modeling and subsurface imaging*, 2021.] (EI, 一作)

11. Fen Zhang, **Dawei Liu**, Xiaokai Wang, Wenchao Chen. Random noise attenuation method for seismic data based on deep residual network[C]. 2018 CPS/SEG Annual Meeting, 2018.

12. Siqi Chi, Wenchao Chen, Lu Zhang, **Dawei Liu**, Jianyou Chen. Three-dimensional seismic texture attributes analysis based on removed strong background noise[C]. 2018 CPS/SEG Annual Meeting, 2018.

13. Jianyou Chen, Wenchao Chen, Xiaokai Wang, **Dawei Liu**. The DAS coupling noise removal using alternating projection iteration with united sparse transforms. 2018 CPS/SEG Annual Meeting, 2018.

14. Jianyou Chen, Yuefeng Pang, Wenchao Chen, Lei Gao, **Dawei Liu**. The analysis of space dimensionality reduction error in SVD filtering algorithm with application to VSP wavefield separation [C].2018 CPS/SEG Annual Meeting, 2018.

## 已完成项目（主要参与人）

1. 国家自然科学基金面上项目 (编号: 41974131), 高铁震源地震信号的稀疏化建模及高精度时频分析方法 (2020.01 至今);
2. 国家自然科学基金面上项目 (编号: 41774135), 基于时频分布特征稀疏优化建模的滑动扫描数据谐波噪声压制方法 (2018.01 - 2021.12);
3. 国家重点研发计划 (编号: 2017YFB0202902), 基于压缩感知的海量数据高效并行处理 (2017.07 - 2021.06);
4. 中国石油天然气股份有限公司勘探开发研究院西北分院攻关项目, 智能三维随机噪声压制技术研究 (2020.10 - 2021.02);
5. 中国石油集团科学技术研究院有限公司攻关项目, 叠后地震资料多尺度智能拓频方法研究 (2020.05 - 2020.12);
6. 中国石油新疆油田公司攻关项目, 高密度地震数据 AI 叠前噪声压制方法研究与应用研究 (2020.10 - 2021.05);
7. 中国石油新疆油田公司攻关项目, 基于地层结构相似区域的三维叠后地震资料智能去噪方法研究 (2019.07 - 2020.06);
8. 中国石油新疆油田公司攻关项目, 基于 Curvelet 联合二维小波变换的强煤层地震响应压制方法研究 (2018.6 - 2019.06)。

## 学术服务

为以下杂志的审稿人:

Geophysics, IEEE Transactions on Geoscience and Remote Sensing, Geoscience and Remote Sensing Letters, Acta Geophysics, Petroleum Science, International Conference on Physics, Mathematics and Statistics, Frontiers, Journal of Geophysics and Engineering, IMAGE

IMAGE MLDA 分会场会议主席 (2023 年)

地质地球物理与地球科学编委 (Board Member for *Geology Geophysics and Earth Science*)

## 获得荣誉

博士研究生国家奖学金, 西安交通大学, 2020 年 10 月

优秀共产党员, 西安交通大学电信学部, 2016 年 9 月

优秀研究生干部, 西安交通大学电信学部, 2016 年 9 月

优秀毕业生, 长安大学, 2013 年 7 月

优秀共产党员, 长安大学, 2012 年 7 月

优秀学生干部, 长安大学, 2012 年 5 月