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EDUCATION

2024-present Postdoc. in Department of Earth Sciences, Uppsala University
2020-2024 Ph.D. in Geological Resources and Geological Engineering, China University of Petroleum (Beijing)
2017-2020 M.S. in Geological Engineering, Yangtze University
2012-2016 B.E. in Oil and Gas Storage and Transportation Engineering, China University of Petroleum, Shengli College

RESEARCH INTERESTS

Computational and AI geophysics for subsurface imaging, monitoring, and characterization, with applications to seismic and DAS data processing, seismic imaging and inversion, reservoir characterization, earthquake and InSAR data analysis.

HONORS & AWARDS

National

2025 Top Ten Outstanding Graduate Dissertation Award, Zhongguancun Green Mining Industry Alliance, China
2023 32nd Sun Yueqi Outstanding Student Award, China
2022 National Scholarship, China

Local Awards

2024 Outstanding Doctoral Dissertation (Top 5%), China University of Petroleum (Beijing)
2023 Model Ph.D. Student for Academic Excellence (1/43), China University of Petroleum (Beijing)
2022 Model Ph.D. Student for Academic Excellence (1/43), China University of Petroleum (Beijing)
2021 Model Ph.D. Student for Academic Excellence (1/43), China University of Petroleum (Beijing)
2020 Outstanding Master's Thesis, Yangtze University
2020 Outstanding Graduates, Yangtze University
2019 Model M.S Student of Academic Records, Yangtze University

PROFESSIONAL SERVICES

Editorial board service

since 2026 Associate Editor for Journal of Applied Geophysics
since 2025 Associate Editor for Journal of Geophysical Research: Machine Learning and Computation
2024-2026 Associate Editor for NRIAG Journal of Astronomy and Geophysics

since 2025 Young Editorial Board Member for Petroleum Science
 since 2025 Young Editorial Board Member for Geophysical Prospecting for Petroleum

Member service

since 2025 Member for SEG Early Career Committee (Quarterly Webinar Series)
 since 2025 Member for SEG Early Career Community

Academic Journal Peer Review

Nature Communications, Earth-Science Reviews, Geophysics, Geophysical Prospecting, Advanced Engineering Informatics, Journal of Geophysical Research: Machine Learning and Computation, Surveys in Geophysics, IEEE Transactions on Geoscience and Remote Sensing, Engineering Applications of Artificial Intelligence, Geophysical Journal International, Seismological Research Letters, Journal of Petroleum Science and Engineering, IEEE Geoscience and Remote Sensing Letters, Journal of Applied Geophysics, IEEE Communications Letters, IEEE Access, Scientific Reports, Earth Science Informatics, Studia Geophysica et Geodaetica

GEOPHYSICAL FIELD EXPERIENCE

- 2026 **Vauze Mine Tailings Facility, Quebec, Canada** (May). Participated in a large-scale 3D seismic and DAS survey for imaging tailings geometry, internal heterogeneity, and geotechnical stability, with hands-on experience in sensor deployment, fibre-optic installation, seismic source operations, and acquisition logistics.
- 2026 **Sala Field Campaign, Sweden** (March). Participated in a large-scale seismic and magnetotelluric survey targeting a Ni-Cu-PGE-bearing mafic-ultramafic system, involving dense 2D and pseudo-3D seismic acquisition, downhole DAS, landstreamer sensors, and seismic vibrator operations.
- 2025 **DAS and Seismic Field Surveys, Ludvika, Sweden** (May and October). Participated in seismic and DAS acquisition for mineral exploration and subsurface characterization in the Blötberget mining area, including the deployment of geophones, nodal sensors, seismic sources, and surface and borehole fibre-optic cables.

PRESENTATIONS

1. Physics-Informed Unsupervised Deconvolution for High-Fidelity Hardrock Seismic Imaging, June 10, 2026, Aberdeen, EAGE, oral.
2. Unsupervised learning with frequency-guided constraints for improved hardrock seismic imaging, June 3, 2025, Toulouse, EAGE, oral.
3. Unsupervised learning framework for denoising distributed acoustic sensing (DAS) data, June 7, 2023, Vienna, EAGE, PC-based oral.
4. Unsupervised learning with a soft attention mechanism for 3-D erratic and random noise attenuation, June 6, 2023, Vienna, EAGE, PC-based oral.
5. Deep learning framework with period and attention mechanisms for porosity and permeability prediction, June 7, 2022, Vienna, EAGE, PC-based oral.
6. Ground Roll Attenuation Using Convolutional Neural Network with Dense Connected Mechanism, June 7, 2022, Madrid, EAGE, PC-based oral.
7. Missing Log Data Interpolation and Uncertainty Analysis via Deep Learning, Oct 21, 2021, Amsterdam, EAGE, PC-based oral.
8. Deep Learning Reservoir Parameters Prediction using Bidirectional Long Short-Term Memory Network, Oct 21, 2021, Amsterdam, EAGE, PC-based oral.

PUBLICATIONS

Peer Reviewed Journal Article

- 2026 **Yang, L.**, and Malehmir, A. “Reliable 5D Sparse Seismic Reconstruction and Imaging Enhancement through Self-Supervised Learning and Recoverability Analysis.” Submitted.
- 2026 **Yang, L.**, Malehmir, A., and Markovic, M. “Unsupervised Physics-Guided Deconvolution for High-Resolution Hardrock Seismic Imaging.” *Geophysical Prospecting*, 74 (1), e70123. doi: [10.1111/1365-2478.70123](https://doi.org/10.1111/1365-2478.70123).
- 2025 **Yang, L.**, Malehmir, A., and Markovic, M. “Enhanced Hardrock Seismic Imaging through Multi-Scale Information-Guided Unsupervised Learning.” *Journal of Geophysical Research: Machine Learning and Computation*, 2 (2), 1-21. doi: [10.1029/2025JH000627](https://doi.org/10.1029/2025JH000627).
- 2025 **Yang, L.**, Fomel, S., Wang, S., Li, W., Meng, J., Li, C., and Chen, Y. “HCTNet: Robust Prestack Seismic Inversion using a Hybrid Convolutional Transformer.” *Geophysics*, 90 (4), N17-N32. doi: [10.1190/geo2024-0015.1](https://doi.org/10.1190/geo2024-0015.1).
- 2025 **Yang, L.**, Chen, Y., Siervo, D., Vallejo, K., and Savvaidis, A. “QBTransNet: Deep Learning Earthquake Distinction from Quarry Blasts using Dilated Convolutional Transformer.” *Seismological Research Letters*, doi: [10.1785/0220240388](https://doi.org/10.1785/0220240388).
- 2025 Chen, Y., Grigoratos, I., **Yang, L.**, Saad, O M., Breton, C., and Savvaidis, A. “Rapid identification of induced seismicity using deep learning.” *Geophysical Journal International*, 243(2). doi: [10.1093/gji/ggaf341](https://doi.org/10.1093/gji/ggaf341).
- 2025 Chen, Y., Li, C., Chen, Y., **Yang, L.**, and Savvaidis, A. “Pyntfa: A python package for non-stationary time-frequency analysis.” *Seismological Research Letters*, doi: [10.1785/0220240457](https://doi.org/10.1785/0220240457).
- 2025 Chen, G., Liu, Y., Sun, Y., **Yang, L.**, Zhang, M., and Zhang, H. “MDLF: Retrieving weak earthquake signals from highly noisy DAS data by moving-deep-learning filtering.” *Geophysics*, [10.1190/geo2024-0758.1](https://doi.org/10.1190/geo2024-0758.1).
- 2025 Li, C., Liu, G., **Yang, L.**, Fomel, S., and Chen, Y. “Robust blind Q-compensated denoising for seismic data with adaptive structural regularization.” *IEEE Transactions on Geoscience and Remote Sensing*, 60. doi: [10.1109/TGRS.2025.3527998](https://doi.org/10.1109/TGRS.2025.3527998).
- 2024 **Yang, L.**, Fomel, S., Wang, S., Chen, X., Saad, O. M., and Chen, Y. “Salt3DNet: A Self-Supervised Learning Framework for 3D Salt Segmentation.” *IEEE Transactions on Geoscience and Remote Sensing*, 60. doi: [10.1109/TGRS.2024.3394592](https://doi.org/10.1109/TGRS.2024.3394592).
- 2024 **Yang, L.**, Fomel, S., Wang, S., Chen, X., Sun, Y., and Chen, Y. “Interpretation of an unsupervised learning framework for multi-dimensional erratic and random noise attenuation.” *IEEE Transactions on Geoscience and Remote Sensing*, 60. doi: [10.1109/TGRS.2024.3386590](https://doi.org/10.1109/TGRS.2024.3386590).
- 2024 Xu, Z., Wu, B., Luo, Y., **Yang, L.**, and Chen, Y. “SelfMixed: Self-supervised Mixed Noise Attenuation for Distributed Acoustic Sensing Data.” *Geophysics*. doi: [10.1190/geo2023-0640.1](https://doi.org/10.1190/geo2023-0640.1).
- 2023 **Yang, L.**, Fomel, S., Wang, S., Chen, X., and Chen, Y. “Deep learning with soft attention mechanism for small-scale ground roll attenuation.” *Geophysics*, 89 (1), WA179-WA193. doi: [10.1190/geo2023-0150.1](https://doi.org/10.1190/geo2023-0150.1).
- 2023 Chen, Y., Huang, W., **Yang, L.**, Oboe, Y. A. S. I., Saad, O. M., and Chen, Y. “DRR: An open-source multi-platform package for the damped rank-reduction method and its applications in seismology.” *Computers & Geosciences*, 180. doi: [10.1016/j.cageo.2023.105440](https://doi.org/10.1016/j.cageo.2023.105440).
- 2023 **Yang, L.**, Fomel, S., Wang, S., Chen, X., Chen, Y., and Chen, Y. “SLKNet: An attention-based deep-learning framework for downhole distributed acoustic sensing data denoising.” *Geophysics*, 88 (6), WC69-WC89. doi: [10.1190/geo2022-0724.1](https://doi.org/10.1190/geo2022-0724.1).
- 2023 Chen, W., Oboe, Y. A. S. I., Saad, O. M., **Yang, L.**, Wang, H., and Chen, Y. “Imaging point diffractors using a low-rank approximation method.” *Geophysics*, 88 (5), N47-N58. doi: [10.1190/geo2022-0374.1](https://doi.org/10.1190/geo2022-0374.1).
- 2023 Sun, Y., Cao, S., Chen, S., **Yang, L.**, and Su, Y. “Simultaneous random plus outlier attenuation and deblending based on L1-norm misfit function.” *Geophysical Prospecting*, 71 (6), 983-997. doi: [10.1111/1365-2478.13370](https://doi.org/10.1111/1365-2478.13370).
- 2023 **Yang, L.**, Fomel, S., Wang, S., Chen, X., and Chen, Y. “Denoising distributed acoustic sensing data using unsupervised deep learning.” *Geophysics*, 88 (4), V317-V332. doi: [10.1190/geo2022-0460.1](https://doi.org/10.1190/geo2022-0460.1).
- 2023 **Yang, L.**, Wang, S., Chen, X., Saad, O. M., Cheng, W., and Chen, Y. “Deep Learning with Fully Convolutional and Dense Connection Framework for Ground Roll Attenuation.” *Surveys in Geophysics*, 44 (6), 1919-1952. doi: [10.1007/s10712-023-09779-8](https://doi.org/10.1007/s10712-023-09779-8).

- 2023 **Yang, L.**, Fomel, S., Wang, S., Cheng, W., Chen, X., Saad, O. M., and Chen, Y. “Porosity and permeability prediction using a transformer and periodic long short-term network.” *Geophysics*, 88 (1), WA293-WA308. doi: [10.1190/geo2022-0150.1](https://doi.org/10.1190/geo2022-0150.1).
- 2023 **Yang, L.**, Wang, S., Chen, X., Chen, W., Saad, O. M., Chen, Y. “Deep Learning Missing Well Log Prediction via LSTM Network with Attention-Period Mechanism.” *Geophysics*, 88(1), D31–D48. doi: [10.1190/geo2020-0749.1](https://doi.org/10.1190/geo2020-0749.1).
- 2023 Chen, Y., Savvaidis, A., Fomel, S., Chen, Y., Saad, O. M., Wang, H., Oboe, Y. A. S. I., **Yang, L.**, and Chen, W. “Distributed Acoustic Sensing Seismic Data Using an Integrated Framework.” *Seismological Research Letters*, 94 (1), 457–472. doi: [10.1785/0220220117](https://doi.org/10.1785/0220220117).
- 2023 **Yang, L.**, Fomel, S., Wang, S., Chen, X., Chen, W., Saad, O. M., and Chen, Y. “Denoising of distributed acoustic sensing data using supervised deep learning.” *Geophysics*, 88 (1), WA91-WA104. doi: [10.1190/geo2022-0138.1](https://doi.org/10.1190/geo2022-0138.1). (**Highly cited paper, May-Aug 2024**)
- 2022 Wang, H., Chen, Y., Saad, O. M., Oboe, Y. A. S. I., **Yang, L.**, Fomel, S., and Chen, Y. “A MATLAB code package for 2D/3D local slope estimation and structural filtering.” *Geophysics*, 87 (3), F1-F14. doi: [10.1190/geo2021-0266.1](https://doi.org/10.1190/geo2021-0266.1).
- 2022 **Yang, L.**, Wang, S., Chen, X., Chen, W., Saad, O. M., Zhou, X., Pham, N., Geng, Z., Fomel, S., and Chen, Y. “High-Fidelity Permeability and Porosity Prediction Using Deep Learning With the Self-Attention Mechanism.” *IEEE Transactions on Neural Networks and Learning Systems*, 34 (7), 3429–3443. doi: [10.1109/TNNLS.2022.3157765](https://doi.org/10.1109/TNNLS.2022.3157765).
- 2022 Saad, O. M., Chen, W., Zhang, F., **Yang, L.**, Zhou, X., and Chen, Y. “Self-Attention Fully Convolutional DenseNets for Automatic Salt Segmentation.” *IEEE Transactions on Neural Networks and Learning Systems*, 34 (7), 3415–3428. doi: [10.1109/TNNLS.2022.3175419](https://doi.org/10.1109/TNNLS.2022.3175419).
- 2022 Chen, W., Wang, H., **Yang, L.**, Liu, X., and Chen, Y. “Nonstationary local slope estimation via forward-backward space derivative calculation.” *Geophysics*, 87 (1), N1-N11. doi: [10.1190/geo2021-0255.1](https://doi.org/10.1190/geo2021-0255.1).
- 2022 Chen, W., Liu, X., Saad, O. M., Oboe, Y. A. S. I., **Yang, L.**, Wang, H., and Chen, Y. “3-D Seismic Diffraction Separation and Imaging Using the Local Rank-Reduction Method.” *IEEE Transactions on Geoscience and Remote Sensing*, 60, 4507110. doi: [10.1109/TGRS.2021.3139314](https://doi.org/10.1109/TGRS.2021.3139314).
- 2022 Zu, S., Cao, J., Fomel, S., **Yang, L.**, Saad, O. M., and Chen, Y. “Robust local slope estimation by deep learning.” *Geophysical Prospecting*, 70 (5), 847–864. doi: [10.1111/1365-2478.13208](https://doi.org/10.1111/1365-2478.13208).
- 2022 Wang, Y., Harris, J. M., Bai, M., Saad, O. M., **Yang, L.**, and Chen, Y. “An explicit stabilization scheme for Q-compensated reverse time migration.” *Geophysics*, 87 (3), F25-F40. doi: [10.1190/geo2021-0134.1](https://doi.org/10.1190/geo2021-0134.1).
- 2022 **Yang, L.**, Wang, S., Chen, X., Saad, O. M., Chen, W., Oboe, Y. A. S. I., and Chen, Y. “Unsupervised 3-D Random Noise Attenuation Using Deep Skip Autoencoder.” *IEEE Transactions on Geoscience and Remote Sensing*, 60, 5905416. doi: [10.1109/TGRS.2021.3100455](https://doi.org/10.1109/TGRS.2021.3100455).
- 2021 Meng, J., Wang, S., Cheng, W., Wang, Z., and **Yang, L.** “AVO Inversion Based on Transfer Learning and Low-Frequency Model.” *IEEE Geoscience and Remote Sensing Letters*, 19, 3004605. doi: [10.1109/LGRS.2021.3132426](https://doi.org/10.1109/LGRS.2021.3132426).
- 2021 Cheng, W., Wang, S., Zhou, C., and **Yang, L.** “Q estimation based on the logarithmic spectral area double difference.” *Geophysics*, 87 (2), V155-V167. doi: [10.1190/geo2021-0040.1](https://doi.org/10.1190/geo2021-0040.1).
- 2021 Chen, W., Saad, O. M., Oboe, Y. A. S. I., **Yang, L.**, and Chen, Y. “Retrieving the leaked signals from noise using a fast dictionary learning method.” *Geophysics*, 87 (1), V39-V49. doi: [10.1190/geo2021-0243.1](https://doi.org/10.1190/geo2021-0243.1).
- 2021 Wang, Y., Bai, M., **Yang, L.**, Zhao, X., Saad, O. M., and Chen, Y. “An Unsplit CFS-PML Scheme for the Second-Order Wave Equation With Its Application in Fractional Viscoacoustic Simulation.” *IEEE Transactions on Geoscience and Remote Sensing*, 60, 5905211. doi: [10.1109/TGRS.2021.3092714](https://doi.org/10.1109/TGRS.2021.3092714).
- 2021 **Yang, L.**, Chen, W., Wang, H., and Chen, Y. “Deep Learning Seismic Random Noise Attenuation via Improved Residual Convolutional Neural Network.” *IEEE Transactions on Geoscience and Remote Sensing*, 59 (9), 4507110. doi: [10.1109/TGRS.2021.3053399](https://doi.org/10.1109/TGRS.2021.3053399).
- 2021 Chen, W., **Yang, L.**, Liu, X., Wang, H., and Chen, Y. “Large Dip Calculation via Robust Nonstationary Plane-Wave Destruction” *IEEE Transactions on Geoscience and Remote Sensing*, 60, 4502310. doi: [10.1109/TGRS.2021.3074119](https://doi.org/10.1109/TGRS.2021.3074119).

- 2021 Saad, O. M., Oboue, Y. A. S. I., Bai, M., Samy, L., **Yang, L.**, and Chen, Y. "Self-Attention Deep Image Prior Network for Unsupervised 3-D Seismic Data Enhancement." *IEEE Transactions on Geoscience and Remote Sensing*, 60, 5907014. doi: [10.1109/TGRS.2021.3108515](https://doi.org/10.1109/TGRS.2021.3108515).
- 2021 Wang, H., Chen, W., Huang, W., Zu, S., Liu, X., **Yang, L.**, and Chen, Y. "Non-stationary predictive filtering for seismic random noise suppression - A tutorial." *Geophysics*, 86(3), W21-W30. doi: [10.1190/geo2020-0368.1](https://doi.org/10.1190/geo2020-0368.1).
- 2021 Chen, W., **Yang, L.**, Wang, S., and Chen, Y. "Fast High-Resolution Hyperbolic Radon Transform." *IEEE Transactions on Geoscience and Remote Sensing*, 60, 4504410. doi: [10.1109/TGRS.2021.3084612](https://doi.org/10.1109/TGRS.2021.3084612).
- 2020 **Yang, L.**, Chen, W., Liu, W., Zha, B., and Zhu, L. "Random Noise Attenuation Based on Residual Convolutional Neural Network in Seismic Datasets." *IEEE Access*, 8(1), 30271-30286. doi: [10.1109/ACCESS.2020.2972464](https://doi.org/10.1109/ACCESS.2020.2972464).
- 2020 Cheng J., Chen, W., Zhou, L., **Yang, L.**, Liu, Q., and Zhang, X. "Deblending of Simultaneous-Source Seismic Data Using Bregman Iterative Shaping." *IEEE Transactions on Geoscience and Remote Sensing*, 59(7), 6208-6217. doi: [10.1109/TGRS.2020.3020468](https://doi.org/10.1109/TGRS.2020.3020468).
- 2020 Chen, W., **Yang, L.**, Zha, B., Zhang, M., and Chen, Y. "Deep learning reservoir porosity prediction based on multilayer long short-term memory network." *Geophysics*, 85(4), WA213-WA225. doi: [10.1190/geo2019-0261.1](https://doi.org/10.1190/geo2019-0261.1).

Meeting Abstracts

- 2026 **Yang, L.**, Malehmir, A., and Markovic, M. "Physics-Informed Unsupervised Deconvolution for High-Fidelity Hardrock Seismic Imaging." *87th EAGE Annual Meeting*.
- 2025 **Yang, L.**, Malehmir, A., and Markovic, M. "Unsupervised learning with frequency-guided constraints for improved hardrock seismic imaging." *86th EAGE Annual Meeting*.
- 2023 **Yang, L.**, Fomel, S., Wang, S., Chen, X., Sun, Y., and Chen, Y. "Unsupervised learning with a soft attention mechanism for 3-D erratic and random noise attenuation." *84th EAGE Annual Meeting*. doi: [10.3997/2214-4609.202310276](https://doi.org/10.3997/2214-4609.202310276).
- 2023 **Yang, L.**, Fomel, S., Wang, S., Chen, X., and Chen, Y. "Unsupervised learning framework for denoising distributed acoustic sensing (DAS) data." *84th EAGE Annual Meeting*. doi: [10.3997/2214-4609.202310273](https://doi.org/10.3997/2214-4609.202310273).
- 2023 **Yang, L.**, Fomel, S., Wang, S., Chen, X., Chen, Y., and Chen, Y. "Deep learning for denoising distributed acoustic sensing data." *IEEE International Geoscience and Remote Sensing Symposium*.
- 2022 **Yang, L.**, Wang, S., Chen, X., Chen, W., Saad, O. M., Cheng, W., and Chen, Y. "Ground Roll Attenuation Using Convolutional Neural Network with Dense Connected Mechanism." *83rd EAGE Annual Meeting*. doi: [10.3997/2214-4609.202210066](https://doi.org/10.3997/2214-4609.202210066).
- 2022 **Yang, L.**, Wang, S., Chen, X., Chen, W., Zhou, X., Pham, N., Geng, Z., Fomel, S., and Chen, Y. "Deep Learning Framework with Period and Attention Mechanisms for Porosity and Permeability Prediction." *83rd EAGE Annual Meeting*. doi: [10.3997/2214-4609.202210068](https://doi.org/10.3997/2214-4609.202210068).
- 2022 Cheng, W., Wang, S., Meng, J., Wang, Z., and **Yang, L.** "Poststack Ps-Wave Data Attenuation Compensation Based on the Equivalent Q Value." *83rd EAGE Annual Meeting*. doi: [10.3997/2214-4609.202210387](https://doi.org/10.3997/2214-4609.202210387).
- 2022 Meng, J., Wang, S., Gneg, Z., Wang, P., **Yang, L.**, and Sang, W. "Multitask Learning for Pre-Stack Three-Parameter Inversion." *83rd EAGE Annual Meeting*. doi: [10.3997/2214-4609.202210237](https://doi.org/10.3997/2214-4609.202210237).
- 2021 **Yang, L.**, Wang, S., Chen, X., Chen, W., Saad, O. M., and Chen, Y. "Missing Log Data Interpolation and Uncertainty Analysis via Deep Learning." *82nd EAGE Annual Meeting*. doi: [10.3997/2214-4609.202112626](https://doi.org/10.3997/2214-4609.202112626).
- 2021 **Yang, L.**, Wang, S., Chen, X., Chen, W., Saad, O. M., and Chen, Y. "Deep Learning Reservoir Parameters Prediction using Bidirectional Long Short-Term Memory Network." *82nd EAGE Annual Meeting*. doi: [10.3997/2214-4609.202112621](https://doi.org/10.3997/2214-4609.202112621).
- 2021 Meng, J., Wang, S., Wang, Z., Zhou, C., **Yang, L.**, and Niu, G. "Acoustic Impedance Inversion Based on Transfer Learning Combined with Convolutional Neural Network and Residual Network." *82nd EAGE Annual Meeting*. doi: [10.3997/2214-4609.202112610](https://doi.org/10.3997/2214-4609.202112610).