Jixin Yang
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EDUCATION

Visiting-Ph.D. Geodetection and Information Technology   2023-Present

Pennsylvania State University

Ph.D. Geodetection and Information Technology   2020-Present

University of Chinese Academy of Sciences, Institute of Acoustics, Ultrasonics Lab

M.S. Geodetection and Information Technology   2016-2019

Chengdu University of Technology

B.S. Geodetection and Information Technology   2012-2016

Chengdu University of Technology

RESEARCH INTERESTS

Time-lapse acoustical monitoring, Finite difference method, Computational inverse problem, Multiparameter waveform inversion tomography, Uncertainty quantification, Machine learning, Time-frequency analysis

RESEARCH EXPERIENCE

State Key Laboratory of Oil & Gas Reservoir Geology and Exploitation Chengdu,China
Graduate student   Sep. 2016 – Jun. 2019
    Time-frequency analysis based on the squeezed generalized S-transform
    Inverse problem for surface seismic signals

State Key Lab of Acoustics, University of Chinese Academy of Sciences   Beijing, China
Ph.D. student   Sep. 2020 – Present
    Frequency-domain finite-difference based computational acoustics in attenuative, elastic and anisotropic media
    Waveform Inversion tomography in the frequency domain and its optimization

OUTREACH

2023 - present	Reviewer of *Geophysics*
2023 - present	Graduate Student Member of IEEE, SEG
2020 - present	Member of Acoustical Society of China

HONORS AND AWARDS

2024	Fully funded SEG Student Membership from Bill Abriel
2022	Scholarship by the University of Chinese Academy of Sciences to United State as a joint-Ph.D. student
2021	The Distinguished Paper Award, 2021 International Academic Forum for Graduate Students of "Oil and Gas • Intelligence @ Future Scientist"
2020	Merit Student, University of Chinese Academy of Sciences
2019	Outstanding Master's Thesis, Chengdu University of Technology
2018	University Third Prize Scholarship, Chengdu University of Technology

PEER-REVIEWED JOURNAL PAPERS

Yang, J.*, & Yu, P.*. (2024). "Time-lapse waveform inversion monitoring for CO2 with automatic differentiation", *Nanomaterials*, 14(2), 138.

Yang, J., He, X.*, & Chen, H. (2023). "Crosswell imaging with wavefield decomposition for frequency-domain reverse time migration", *Journal of Geophysics and Engineering*, 20(6), 1279–1290.

Yang, J. & Wen, X. (2023). "Simultaneous inversion method of phase and reflection coefficient based on compressed sensing", *Patent, CN 113589381 B, Authorized.*

Yang, J., He, X.*, & Chen, H. (2022). "Processing the artificial edge-effects for finite-difference frequency-domain in viscoelastic anisotropic formations", *Applied Sciences*, 12(9), 4719.

Yang, J., Wen, X.*, & Chen, X. (2017). "Computation method for reservoir fluid mobility based on sparsity -based adaptive S-transform", *Science Technology and Engineering*, 17(36), 145-151.

Wen, X., **Yang, J.***, & Li, L. (2019). "Low-frequency sparse double-constrained broadband seismic impedance inversion", *Natural Gas Industry B*, 6(6), 556-563.

Pan, Y., He, X.*, **Yang, J.**, & Wang, X. (2022). "Q-compensated viscoelastic reverse time migration in crosswell seismic imaging", *Journal of Geophysics and Engineering*, 2022, 1-21.

Zhang, R., Wen, X.*, **Yang, J**., Li, L., & Liu, S. (2020). "Two-term reflection coefficient equation with Young's modulus and Poisson ratio and its pre-stack seismic inversion", *Oil Geophysical Prospecting*, 54(01), 145-153.

Nie, W., Wen, X.*, & **Yang, J.** (2020). "L1-2 minimization for P- and S-impedance inversion", *Interpretation*, 8(1), 1-68.

Chen, X., Wen, X.*, & **Yang, J.** (2019). "Wavefield simulation based on optimized finite-difference coefficient", *Liaoning Chemical Industry*, 48(03), 266-271.

Zhang, Y., Wen, X.*, Jiang, L., Liu, J., & **Yang, J.** (2020). "Prediction of high-quality reservoirs using the reservoir fluid mobility attribute computed from seismic data", *Journal of Petroleum Science and Engineering*, 190(7), 107007.

Ran, X., Zhou, H.*, Zhang, Y., Li, L. & **Yang, J.** (2019). "A frequency division - reconstruction wave impedance inversion method based on sparse window S transform", *China Offshore Oil and Gas*, 31(04), 75-84.

He, J., Wen, X.*, Nie, W., Li, L., & **Yang, J.** (2020). "Fracture zone prediction based on random forest algorithm", *Oil Geophysical Prospecting*, 55(01), 161-166.

Li, W., Wen, X.*, Li, T., Liu, S., Li, L., & **Yang, J.** (2020). "Fluid identification factors fusion based on proximal support vector machine", *Progress in Geophysics,* 35(01), 139-144.

Li, W., Wen, X.*, Li, T., Li, L., Liu, S., & **Yang, J.** (2018). "AVO types of discrimination based on a proximal support vector machine", *Oil Geophysical Prospecting,* 53(05),969-974.

SUBMITTED MANUSCRIPTS/IN PREP

Yang, J., Yu, P.*, & He, X. (2024). "Monitoring hydrogen underground migration and distribution using time-lapse acoustic waveform inversion tomography", *International Journal of Hydrogen Energy*. (In Submission)

Yang, J., Zhu, T.*, & He, X. (2024). "Time-lapse attenuation impedance and velocity multiparameter tomography using waveform inversion for injected CO_2 plume monitoring", *Geophysics*. (In Preparation)

Yang, J., Liu, Z.*, & Chen, S. (2024). "Scale-aware edge-preserving crosshole full waveform inversion with the nonlinear anisotropic hybrid diffusion filter", *Geophysical Journal International.* (In submission)

CONFERENCE ABSTRACTS

Yang, J., He, X., & Chen, H. (2023, July). "Frequency-domain finite-difference modeling of anisotropic elastic wavefield". In *2023 National Acoustics Conference.*

Yang, J., He, X., & Chen, H. (2021, November). "Frequency domain modeling of elastic wavefield in anisotropic media". In *2021 International Academic Forum for Graduate Students of "Oil and Gas ・ Intelligence Future Scientist".*

Yang, J., Wen, X., & Li, L. (2018, August). "High-resolution processing methodbased on alternating direction algorithm and sparse inversion reflection coefficient characteristics". In *SEG 2018 Workshop: Reservoir Geophysics.*

Yang, J., Wen, X., & Chen, X. (2018, March). "Computation method of reservoir fluid mobility based on sparse-window S-transform". *International Geophysical Conference Beijing, China.*

Li, L., Wen, X., **Yang, J.** & Ran, X. (2018, August). "Frequency-divided inversionbased on sparse window S transform". In *SEG 2018 Workshop: Reservoir Geophysics.*

Huang, W., Wen, X., Zhang, Y., **Yang, J.** & Li, L. (2018, March). "Application of generalized S-transform based on empirical mode decomposition in seismic data frequency division". *International Geophysical Conference Beijing, China.*

Li, L., Wen, X., Liu, S., **Yang, J.** & He, J. (2018, March). "Application of approximate equations of Young's modulus and Poisson's ratio of two reflection coefficients in pre-stack inversion". *International Geophysical Conference Beijing,China.*

Liu, S., Wen, X., Li, L., **Yang, J.** & Chen, X. (2018, August). "Fault analysis ofazimuth curvature attribute based on curvelet transform". In *SEG 2018 Workshop: Reservoir Geophysics.*

Zhang, Y., Wen, X., Cao, Q., **Yang, J.** & Wei, H. (2017). "Seismic spectrum decomposition method based on deconvolution synchronous generalized S transform". *Proceedings of 2017 geophysical exploration technology seminar ofChina Petroleum Society.*