MASTER TABLE 1 (PUBLICATION & DATASET)

Number Id of Paper	Publication Metadata								Dataset Description					
	Year	Title	Category	Application	Type of Paper	First Author	Country	University/ Institute	Purpose / Objective	Data Type	Training Data	Input	Attribute Selection	Number of Label
1	2017	Automatic Noise Exploration in Urban Areas	Preprocessing	Noise classification, Targeted noise, data quality	Conference	Fantine Huot	France	Université Grenoble Alpes	Automate identification of non-ideal noises	Field	Field	Raw seismic data	Auto	2
2	2018	Automated Parallel Data Processing Engine with Application to Large-scale Feature Extraction	Preprocessing	Data Processing	Conference	Xin Xing	United States	Georgia Institute of Technology	To develop an automated parallel data processing engine to handle large scale seismic data feature extraction and significantly improve processing efficiency	Field	N/A	Seismic signal	N/A	N/A
3	2018	Machine Learning Algorithms for Automated Seismic Ambient Noise Processing Applied to DAS Acquisition	Preprocessing	Denoising, Signal Enhancement, Data Quality	Conference	Fantine Huot	United States	Stanford University	Automated ambient noise processing for seismic acquisition using DAS	Field + Synthetic	Field + Synthetic	Windowed time-channel matrices	Manually Label	2
4	2019	A Real-Time Early Warning Seismic Event Detection Algorithm Using Smart Geo-Spatial Bi-Axial Inclinometer Nodes for Industry 4.0 Applications	Event	Event Detection	Journal Article	Hasan Tariq	Qatar	Qatar University	Real-time early warning and seismic event detection to ensure quick alerts for human safety and structural integrity	Field	N/A	Numeric	N/A	2
5	2019	An Event Recognition Method for Φ-OTDR Sensing System Based on Deep Learning	Event	Event Detection	Journal Article	Yi Shi	China	Shantou University	Improve event recognition capability of OTDR systems using deep learning	Field	Field	2D grayscale images	N/A	5
6	2019	Automated Ambient Noise Processing Applied to Fiber Optic Seismic Acquisition (DAS)	Preprocessing	Denoising	Journal Article	Fantine Huot	United States	Stanford University	Automated seismic ambient noise processing to remove traffic noise	Field	Field	DAS (strain rate)	N/A	2
7	2019	Automatic phase picker for single component borehole seismic data with deep neural network	Event	Phase Picking	Conference	Jing Zheng	China	China University of Mining & Technology (Beijing)	Develop automatic phase picking for single-component seismic data using CNN-RNN	Field	Field	Numeric waveforms	Manually Label	2
8	2019	Detecting microseismic events in downhole distributed acoustic sensing data using convolutional neural networks	Event	Event Detection	Conference	Gary Binder	United States	Colorado School of Mines	Develop convolutional neural networks for microseismic event detection in downhole DAS data	Field + Synthetic	Field	2D space-time images	Manually Label	2
9	2019	Distributed Acoustic Sensing Using Dark Fiber for Near-Surface Characterization and Broadband Seismic Event Detection	Preprocessing	Preprocessing	Journal Article	Jonathan B. Ajo-Franklin	United States	Lawrence Berkeley National Lab (USA)	Demonstrate using existing telecom dark fiber for near-surface characterization and broadband seismic monitoring	Field	N/A	Time series strain-rate signals from DAS	N/A	N/A
10	2019	Efficient Processing of Distributed Acoustic Sensing Data Using a Deep Learning Approach	Event	Event Detection	Journal Article	Lihi Shiloh	Israel	Tel Aviv University	Develop an efficient deep learning-based method for automatic DAS event detection and classification	Field + Synthetic	Field + Synthetic	2D-channel images	Auto and manually	3
11	2019	Event detection method comparison for distributed acoustic sensors using φ-OTDR	Event	Event Detection	Journal Article	Minjie Zhang	China	Shanghai University	Compare event detection methods for OTDR, focusing on SVM and ELM	Field	Field	Spectrogram image features	Manually Label	5
12	2019	Machine learning-based fracture-hit detection algorithm using LFDAS signal	Event	Event Detection	Journal Article	Ge Jin	United States	ConocoPhillips	Develop a machine learning algorithm to automatically detect hydraulic fracture hits	Field	Field	2D DAS strain-time images	Manually Label	2
13	2020	Application of machine learning to microseismic event detection in distributed acoustic sensing data	Event	Event Detection	Journal Article	Anna L. Stork	United Kingdom	University of Bristol (UK)	Demonstrate CNN-based detection of microseismic events in DAS data across different data sets	Field + Synthetic	Field + Synthetic	512×512 grayscale images	Auto	2
14	2020	Deep Learning for Surface Wave Identification in Distributed Acoustic Sensing Data	Event	Event Identification	Conference	Vincent Dumont	United States	Lawrence Berkeley National Lab (USA)	Identify and quantify coherent surface wave signals in DAS data using deep learning methods	Field	Field	2D grayscale images	Manually Label	2

15	2020	Fiber-optic distributed seismic sensing data generator and its application for training classification nets	Event	Event Detection	Journal Article	Lihi Shiloh	Israel	Tel Aviv University	Generate synthetic DAS seismic data for neural network training	Field + Synthetic	Synthetic data	2-channel images	Auto and manually	3
16	2020	Footstep detection in urban seismic data with a convolutional neural network	Event	Event Detection	Journal Article	Srikanth Jakkampudi	United States	Virginia Tech (USA)	Detect and classify footsteps in urban seismic DAS data	Field	Field	2D waterfall images	Manually Label	2
17	2020	Pattern recognition based on pulse scanning imaging and convolutional neural network for vibrational events in Φ-OTDR	Event	Pattern recognition	Journal Article	Qian Sun	China	Tianjin University of Commerce	Improve event recognition accuracy in OTDR fiber sensing using CNN-based deep learning	Field data	Field data	RGB images	Manually Label	5
18	2020	SC-PSNET: A deep neural network for automatic P- and S-phase detection and arrival-time picker using 1C recordings	Event	Phase Picking	Journal Article	Jing Zheng	China	China University of Mining & Technology (Beijing)	Automatically detect and pick P- and S-phase arrival-times from single-component seismic data	Field + Synthetic	Field + Synthetic	Common Source Gathers	Manually Label	2
19	2020	The near-surface velocity reversal and its detection via unsupervised machine learning	Event	Classification	Journal Article	Mengyao Sun	China	University of Science and Technology of China (USTC)	Detect near-surface velocity reversal and distinguish shingling from non-shingling seismic records	Field + Synthetic	N/A	2D shot gather images	Auto	2
20	2021	A Machine Learning-Based Seismic Data Compression and Interpretation Using a Novel Shifted-Matrix Decomposition Algorithm	Preprocessing	Denoising, Compression, Signal Detection	Journal Article	Milan Brankovic	United States	Texas A&M University	Compress seismic data, reduce noise, and estimate wave velocity	Field + Synthetic	Field	N/A	N/A	N/A
21	2021	An Easy Access Method for Event Recognition of φ-OTDR Sensing System Based on Transfer Learning	Event	Event Detection	Journal Article	Yi Shi	China	Shantou University	Develop a transfer learning-based CNN method for rapid and efficient event recognition in OTDR systems	Field	Field	Scaled 227×227 matrices converted into 3-channel	Manually Label	8
22	2021	Aquifer Monitoring Using Ambient Seismic Noise Recorded with Distributed Acoustic Sensing (DAS) Deployed on Dark Fiber	Preprocessing	Ambient noise interferometry	Journal Article	Verónica Rodríguez Tribaldos	United States	Lawrence Berkeley National Lab (USA)	Monitor groundwater fluctuations through seismic velocity variations	Field	Field	DAS	N/A	N/A
23	2021	Classification and Localization of Low-Frequency DAS Strain Rate Patterns with Convolutional Neural Networks	Event	Classification and Localization	Conference	Mengyuan Chen	United States	Texas A&M University	Identify and localize fracture-hit events in low-frequency DAS strain rate data	Synthetic	Synthetic	224×224 pixel RGB images	Manually Label	2
24	2021	Convolutional Neural Network for Guided Wave Energy Identification in Microseismic DAS Data	Event	Event Identification	Conference	Youfang Liu	United States	Colorado School of Mines	Develop a CNN-based method for identifying guided wave energy from DAS microseismic data	Field + Synthetic	Synthetic	200 channels × 2000 time samples	Manually Label	2
25	2021	Deep Neural Networks for Detection and Location of Microseismic Events and Velocity Model Inversion from Microseismic Data Acquired by Distributed Acoustic Sensing Array	Event	Event Detection	Journal Article	Daniel Wamriew	Russia	Skolkovo Institute of Science and Technology	Detection, location, and velocity model inversion of microseismic events using deep neural networks from DAS data	Field + Synthetic	Field + Synthetic	converted to grayscale images, 256×256 pixel	N/A	N/A
26	2021	Denoising the Optical Fiber Seismic Data by Using Convolutional Adversarial Network Based on Loss Balance	Preprocessing	Denoising	Journal Article	Xintong Dong	China	Jilin University	Suppress DAS noise and enhance SNR in seismic data	Field + Synthetic	Field + Synthetic	64 × 64 patches	N/A	N/A
27	2021	Direct microseismic event location and characterization from passive seismic data using convolutional neural networks	Event	Event Detection	Journal Article	Hanchen Wang	Saudi Arabia	King Abdullah University of Science and Technology (KAUST)	Automatic and direct location and characterization of microseismic events from passive seismic data without picking	Synthetic	Synthetic	2D segments	N/A	3
28	2021	Distributed Acoustic Sensing Using Dark Fiber for Array Detection of Regional Earthquakes	Event	Event Detection	Journal Article	Avinash Nayak	United States	Lawrence Berkeley National Lab (USA)	Evaluate dark-fiber DAS array for detection of regional earthquakes using beamforming	Field	N/A	Time-series waveform data	N/A	N/A

29	2021	Estimation of DAS microseismic source mechanisms using unsupervised deep learning	Event	Event Detection	Conference	Matthew Eaton	United States	Chevron Technical Center (Houston, TX)	Estimate microseismic source mechanisms from DAS data using unsupervised deep learning	Field	Field + Synthetic	time-series from DAS channels	N/A	N/A
30	2021	Event Detection for Distributed Acoustic Sensing: Combining Knowledge-Based, Classical Machine Learning, and Deep Learning Approaches	Event	Event Detection	Journal Article	Mugdim Bublin	Austria	University of Applied Sciences	Develop robust pipeline event detection system combining knowledge-based methods, classical ML, and deep learning	Field	Field	grayscale images	Manually Label	2
31	2021	High-Fidelity Acoustic Signal Enhancement for Phase-OTDR Using Supervised Learning	Preprocessing	Signal enhancement, Denoising	Journal Article	Fei Jiang	China	Beijing Institute of Technology	Enhance acoustic signals for DAS using supervised learning	Field + Synthetic	Field + Synthetic	1D sequences at each fiber	Auto	N/A
32	2021	Improving Microseismic Denoising Using 4D (Temporal) Tensors and High-Order Singular Value Decomposition	Preprocessing	Denoising, Compression, Temporal Analysis	Conference	Keyla Gonzalez	United States	Texas A&M University	Compress, denoise, and enhance microseismic data	Field + Synthetic	N/A	3D: [Time × Receivers × Event Locations], 4D: [Time × Receivers × Event Locations × Time Variants]	N/A	N/A
33	2021	Rapid Response DAS Denoising Method Based on Deep Learning	Preprocessing	Denoising, Signal Enhancement	Journal Article	Maoning Wang	China	Sichuan University	Real-time DAS signal denoising for quick target tracking	Field	Field	2D matrix: space × time	N/A	N/A
34	2021	SCALODEEP: A Highly Generalized Deep Learning Framework for Real-Time Earthquake Detection	Event	Event Detection	Journal Article	Omar M. Saad	China	Zhejiang University	Develop generalized CNN-based earthquake detection method applicable across different seismic regions	Field	Field	Scalograms derived from 30s segments of 3C seismograms	Manually Label	2
35	2021	The Value of Information from Horizontal Distributed Acoustic Sensing Compared to Multicomponent Geophones Via Machine Learning	Event	Event Detection	Journal Article	Samir F. Jreij	United States	Colorado School of Mines	Quantify and compare the value of information (VOI) from DAS compared to multicomponent geophones for subsurface fault detection	Synthetic	Synthetic	250 × 250 resized images derived from 150 × 155-pixel slices	Auto	2
36	2022	A Deep Learning Approach for Signal Identification in the Fluid Injection Process During Hydraulic Fracturing Using Distributed Acoustic Sensing Data	Event	Event Identification	Journal Article	Yikang Zheng	China	Chinese Academy of Sciences	Automatic identification of fluid injection signals in DAS data	Field	Field	128×128 images, time-channel slices	Manually Label	2
37	2022	A Novel Iterative PA-MRNet: Multiple Noise Suppression and Weak Signals Recovery for Downhole DAS Data	Preprocessing	Denoising, Weak Signal Recovery	Journal Article	Yanan Tian	China	Jilin University	Suppress multiple complex noises & recover weak signals	Field + Synthetic	Field + Synthetic	128×128 patches	Auto	N/A
38	2022	ADE-Net: A Deep Neural Network for DAS Earthquake Detection Trained with a Limited Number of Positive Samples	Event	Event Detection	Journal Article	Hao Lv	China	Chinese Academy of Sciences	Automated earthquake detection from DAS data with limited training data	Field	Field	2D DAS data (time × channel)	Manually Label	2
39	2022	Background Noise Suppression for DAS-VSP Records Using GC-AB-Unet	Preprocessing	Denoising / Background Noise Suppression	Journal Article	Haixia Zhao	China	Xi'an Jiaotong University	Remove background noise in DAS-VSP	Field + Synthetic	Field + Synthetic	2D Arrays / Matrices of Seismic Traces	Auto	N/A
40	2022	Classification and Localization of Fracture-Hit Events in Low-Frequency Distributed Acoustic Sensing Strain Rate with Convolutional Neural Networks	Event	Classification and Localization	Journal Article	Mengyuan Chen	United States	Texas A&M University	To develop a real-time CNN-based workflow to detect and locate fracture-hit events from low-frequency DAS strain rate images	Synthetic	Synthetic	224×224-pixel RGB images	Auto	2
41	2022	Convolutional Neural Network-Based Classification of Microseismic Events Originating in a Stimulated Reservoir from Distributed Acoustic Sensing Data	Event	Event Detection	Journal Article	Youfang Liu	United States	Colorado School of Mines	Automate classification of microseismic events inside and outside targeted reservoir formations using CNN and guided waves analysis	Field + Synthetic	Field + Synthetic	200 × 200-pixel images. DAS seismograms	Manually Label	2

42	2022	Coupled Noise Reduction in Distributed Acoustic Sensing Seismic Data Based on Convolutional Neural Network	Preprocessing	Denoising	Journal Article	Yuxing Zhao	China	Jilin University	Suppress coupled noise	Field + Synthetic	Field + Synthetic	2D Seismic Sections	Auto	N/A
43	2022	DAS Weak Signals Recovery Under Condition of Multiple Complicated Noise Using CA-MSRNet	Preprocessing	Denoising, Weak signal recovery	Journal Article	Yue Li	China	Jilin University	Recover weak signals under multiple noises	Field + Synthetic	Field + Synthetic	100×100 patches, sampled from 2D DAS records	Auto	N/A
44	2022	Data Augmentation and Its Application in Distributed Acoustic Sensing Data Denoising	Preprocessing	Denoising	Journal Article	Y.X. Zhao	China	Jilin University	Generate synthetic noise to improve denoising	Field + Synthetic	N/A	2D patches of 400×400 size	Auto	N/A
45	2022	Deep Compressed Seismic Learning for Fast Location and Moment Tensor Inferences with Natural and Induced Seismicity	Preprocessing	Feature Extraction	Journal Article	Ismael Vera Rodrigue z	Norway	NORSAR	Provide rapid seismic event characterization using compressed sensing and CNN to expedite location and moment tensor estimations	Field + Synthetic	Synthetic	PNG images	Auto	N/A
46	2022	Deep-Learning-Based Earthquake Detection for Fiber-Optic Distributed Acoustic Sensing	Event	Event Detection	Journal Article	Pablo D. Hernánde z	Chile	Universidad Técnica Federico Santa María	Reliable detection of earthquakes using DAS measurements	Field	Field	1D time-series signals (6000 samples per 60 s, resampled at 100 Hz)	Auto and manually	2
47	2022	Denoising Deep Learning Network Based on Singular Spectrum Analysis—DAS Seismic Data Denoising with Multichannel SVDDCNN	Preprocessing	Denoising	Journal Article	Qiankun Feng	China	Jilin University	Denoise DAS seismic data	Field + Synthetic	Field + Synthetic	64×64 patches; 3×128×128 in network input from 3-channel SVD subspaces	Auto	N/A
48	2022	Detection and Characterization of Microseismic Events from Fiber-Optic DAS Data Using Deep Learning	Event	Event Detection	Journal Article	Fantine Huot	United States	Stanford University	Automated detection and characterization of microseismic events using DAS	Field data	Field data	2D windows: channel × time	Manually Label	2
49	2022	Detection Range Enhancement for Φ-OTDR Using Semantic Image Segmentation	Event	Event Enhancement	Journal Article	Junchan Li	China	Taiyuan University of Technology	Enhance detection range for Φ-OTDR using deep learning-based semantic segmentation	Field data	Field data	Pixel-wise binary segmentatio n map (vibration vs non-vibration)	Manually Label	2
50	2022	Distributed Acoustic Sensing Vertical Seismic Profile Data Denoiser Based on Convolutional Neural Network	Preprocessing	Denoising	Journal Article	Yuxing Zhao	China	Jilin University	Remove various common noise types in DAS-VSP data	Field + Synthetic	Field + Synthetic	2D patches of size 400×400 (matrix format)	Auto	2
51	2022	Distributed Acoustic Sensing Vertical Seismic Profile Data Denoising Based on Multistage Denoising Network	Preprocessing	Denoising	Journal Article	Yue Li	China	Jilin University	Progressive denoising of DAS VSP data	Field + Synthetic	Field + Synthetic	2D patches (256×256), likely float arrays	N/A	2
52	2022	Efficient SPSNet for Downhole Weak DAS Signals Recovery	Preprocessing	Denoising, Weak signal recovery	Journal Article	Yanan Tian	China	Jilin University	Suppress multiple noise & recover weak signals	Field + Synthetic	Field + Synthetic	2D data patches (128×128	N/A	N/A
53	2022	Hydraulic Fracture-Hit Detection System Using Low-Frequency DAS Data	Event	Event Detection	Conference	Xiaoyu Zhu	United States	Colorado School of Mines	Develop a fracture-hit detection system using LF-DAS data and machine learning	Field	Field	Time-channel matrix	Manually Label	2
54	2022	Improving Earthquake Detection in Fibre-Optic Distributed Acoustic Sensors Using Deep Learning and Hybrid Datasets	Event	Event Detection	Conference	Pablo D. Hernánde z	Chile	Universidad Técnica Federico Santa María	Enhance earthquake detection in DAS using deep learning and hybrid datasets	Field + Synthetic	Field + Synthetic	1D timeseries	Manually Label	2
55	2022	Intelligent Microseismic Events Recognition in Fiber-Optic	Event	Event Detection	Journal Article	Fei Liu	China	University of Science &	Compare recognition accuracy of fibre-optic vs electronic MS monitoring systems	Field	Field	Time series waveform data	Manually Label	2

		Microseismic Monitoring System Compared with Electronic One						Technology Beijing						
56	2022	Known and Unknown Event Detection in OTDR Traces by Deep Learning Networks	Event	Event Detection	Journal Article	Antonino Maria Rizzo	Italy	Politecnico di Milano	Detect known and unknown events in OTDR traces automatically	Field	Field	1D signal vectors	Manually Label	4
57	2022	Markov Transition Fields and Deep Learning-Based Event-Classification and Vibration-Frequency Measurement for Φ-OTDR	Event	Event Classification	Journal Article	Xiaoting Zhao	China	Hefei University of Technology	Classify vibration-events and measure vibration-frequency using deep learning and MTF	Field	Field	1D time series → 2D Markov Transition Field (image)	Manually Label	5
58	2022	Microseismic Analysis Over a Single Horizontal DAS Fiber Using Guided Waves	Event	Event Detection	Journal Article	Ariel Lellouch	United States	Stanford University	Microseismic event detection and localization using guided waves with DAS	Field	Field	2D (Channel × Time) windows	Manually Label	2
59	2022	Microseismic Monitoring and Analysis Using Cutting-Edge Technology: A Key Enabler for Reservoir Characterization	Event	Event Detection	Journal Article	Daniel Wamriew	Russia	Skolkovo Institute of Science and Technology	Real-time microseismic event detection and localization for reservoir fracture monitoring using DAS	Field + Synthetic	Field + Synthetic	256×256 grayscale PNG images	Manually Label	N/A
60	2022	Multi-Scale Progressive Fusion Attention Network Based on Small Sample Training for DAS Noise Suppression	Preprocessing	Denoising	Journal Article	Ning Wu	China	Jilin University	Suppress DAS noise effectively with small samples	Field + Synthetic	Field + Synthetic	2D DAS patches (240 × 240)	Auto	N/A
61	2022	Multiscale Residual Pyramid Network for Seismic Background Noise Attenuation	Preprocessing	Denoising	Journal Article	Tie Zhong	China	Northeast Electric Power University	Improve DAS seismic noise attenuation	Field + Synthetic	Field + Synthetic	2D patches (64×64) from seismic records	Auto	N/A
62	2022	Noise Analysis and ML Denoising of DAS VSP Data Acquired from ESP Lifted Wells	Preprocessing	Denoising	Conference	Ge Zhan	United States	Chevron Technical Center (Houston, TX)	ESP-induced noise analysis and removal	Field	Field	N/A	N/A	N/A
63	2022	Optical Fiber Fault Detection and Localization in a Noisy OTDR Trace Based on Denoising Convolutional Autoencoder and Bidirectional Long Short-Term Memory	Preprocessing	Denoising, Signal Enhancement, Event Detection, Localization, Fault Diagnosis	Journal Article	Khouloud Abdelli	Germany	Kiel University	Optical fiber fault detection and localization	Field	Field	Time series, sequences of length 99	Manually Label	4
64	2022	Random and Coherent Noise Suppression in DAS-VSP Data by Using a Supervised Deep Learning Method	Preprocessing	Denoising	Journal Article	Xintong Dong	China	Jilin University	Suppress random and coherent DAS noise	Field + Synthetic	Field + Synthetic	2D patches (150×151	Auto	N/A
65	2022	RCEN: A Deep-Learning-Based Background Noise Suppression Method for DAS-VSP Records	Preprocessing	Denoising	Journal Article	Tie Zhong	China	Jilin University	Suppress DAS-VSP background noise	Field + Synthetic	Field + Synthetic	64 × 64 image patches	Auto	N/A
66	2022	Research on Noise Suppression Technology of Marine Optical Fiber Towed Streamer Seismic Data Based on ResUNet	Preprocessing	Denoising	Journal Article	Hongfei Qian	China	China University of Geosciences (Wuhan)	Noise suppression of marine fiber seismic	Field	Field	2D shot gathers (256 traces × 1600 samples)	Auto and manually	N/A
67	2022	Seismic Intensity Estimation Using Multilayer Perceptron for Onsite Earthquake Early Warning	Event	Event Detection	Journal Article	Siddhartha Sarkar	India	CSIR–Central Scientific Instruments Organisation (CSIO)	Early warning and seismic intensity estimation using multilayer perceptron (MLP) for earthquake events	Field	Field	Time-series accelerogram data, 3-axis (UD, NS, EW), 100 Hz sampling	Auto	2
68	2022	Transform Learning in the Synchrosqueezing Frequency Domain A Novel Denoising Strategy for Optical Fiber Seismic Records	Preprocessing	Denoising	Journal Article	Qiankun Feng	China	Jilin University	Denoising DAS-VSP data using synchrosqueezing TF domain	Field + Synthetic	Field + Synthetic	N/A	N/A	N/A
69	2022	Unsupervised Anomaly Detection Applied to Φ-OTDR	Event	Event Detection	Journal Article	Antonio Almudévar	Spain	University of Zaragoza	Event detection and noise removal using unsupervised anomaly detection techniques in OTDR data	Field	Field	2D spatio-temporal matrix	N/A	N/A

70	2023	A Deep Learning-Based Approach with Anti-Noise Ability for Identification of Rock Microcracks Using Distributed Fibre Optic Sensing Data	Event	Identification	Journal Article	Shuai Zhao	China	Nanjing University	Improve anti-noise ability of deep learning models for rock microcrack identification	Field	Field	Matrix (32×1), continuous strain points	Manually Label	2
71	2023	A Global and Multiscale Denoising Method Based on Generative Adversarial Network for DAS VSP Data	Preprocessing	Denoising	Journal Article	Haitao Ma	China	Jilin University	High-precision DAS-VSP data denoising	Field + Synthetic	Field + Synthetic	2D matrices / image-like patches (128×128 sliding windows)	Auto	N/A
72	2023	A multi-scale dense-connection denoising network for DAS-VSP records	Preprocessing	Denoising, Signal Enhancement	Journal Article	Xintong Dong	China	Jilin University	Effective denoising of DAS-VSP data	Field + Synthetic	Field + Synthetic	64×64 image patches	Auto	N/A
73	2023	A Self-Supervised Deep Learning Approach for Blind Denoising and Waveform Coherence Enhancement in DAS Data	Preprocessing	Blind denoising and waveform coherence enhancement	Journal Article	Martijn van den Ende	France	Université Côte d'Azur	Blind denoising and waveform coherence enhancement	Field + Synthetic	Field + Synthetic	2D tensor: 11 channels × 2048-time samples	N/A	N/A
74	2023	Advanced Signal Processing in Distributed Acoustic Sensors Based on Submarine Cables	Preprocessing	Denoising, Signal Enhancement, Feature Extraction, Event Classification, Epicentre Localization	Journal Article	Shaoyi Chen	China	Sun Yat-sen University	Advanced seismic processing for oceanic DAS	Field	Field	DAS submarine cable seismic data	N/A	N/A
75	2023	An efficient deep learning method for VSP wavefield separation: A DAS-VSP case	Preprocessing	Wavefield Separation, Denoising	Journal Article	Xiaobin Li	China	Chengdu University of Technology	VSP wavefield separation efficiency	Field + Synthetic	Synthetic	2D patches (128×128 or 256×256-pixel images)	N/A	N/A
76	2023	Automated Microseismic Event Detection for Downhole Distributed Acoustic Sensing Data Processing	Event	Event Detection	Conference	Yongzan Liu	United States	Schlumberger-Doll Research	Automate real-time microseismic event detection in DAS data using waveform coherency	Field	N/A	Trace-time 2D domain	N/A	N/A
77	2023	Automatic Classification with an Autoencoder of Seismic Signals on a Distributed Acoustic Sensing Cable	Event	Classification	Journal Article	Chih-Chieh Chien	United States	University of California San Diego	Classification of seismic signals during geothermal hydraulic fracturing using unsupervised learning	Field	Field	Spectrograms: 87 (frequency bins) × 100 (time bins)	N/A	7
78	2023	Characterizing hydraulic fracture growth using distributed acoustic sensing-recorded microseismic reflections	Event	Signal enhancement, event detection,	Journal Article	Yuanyuan Ma	Canada	University of Calgary	Imaging hydraulic fractures using DAS	Field + Synthetic	N/A	Strain or strain-rate (axial), sampled at 2000 Hz, 4 m channel spacing	N/A	N/A
79	2023	Complete perception self-attention network for weak seismic signal recovery in distributed acoustic sensing vertical seismic profile data	Preprocessing	Denoising, weak signal recovery	Journal Article	Jilei Sui	China	Jilin University	Design and validate a new deep-learning network (CP-SANet) that improves recovery of weak signals in downhole DAS data by extracting global and local features (self-attention).	Field + Synthetic	Field + Synthetic	2D patches of 256×256 size	N/A	N/A
80	2023	DAS-N2N: machine learning distributed acoustic sensing (DAS) signal denoising without clean data	Preprocessing	Denoising	Journal Article	S. Lapins	United Kingdom	University of Bristol (UK)	Demonstrate a weakly supervised method (DAS-N2N) for random noise suppression in DAS data without needing clean reference data, by using two spliced fibres that record the same signal but different random noise.	Field	Field	TDMS (converted into 128 × 96 time × channel arrays)	N/A	N/A
81	2023	DAS-VSP Noise Elimination Based on the Dilated Pyramid Attention Network	Preprocessing	Denoising	Journal Article	Tie Zhong	China	Northeast Electric Power University	Eliminate complex DAS noise effectively	Field + Synthetic	Field + Synthetic	2D patches (image-like matrix from seismic records)	N/A	N/A
82	2023	Deep Learning-Based DAS to Geophone Data Transformation	Event	Data Transformation	Journal Article	Lei Fu	United States	Aramco Research Center	Convert DAS measurements into geophone data using deep learning	Field	Field	Strain rate time series	N/A	N/A

83	2023	Deep-Learning-Based Simultaneous Demodulation and Denoising for Φ-OTDR	Preprocessing	Denoising and Demodulation	Conference	Yongxin Liang	China	University of Electronic Science and Technology of China	Simultaneous demodulation and denoising of OTDR DAS signals	Synthetic	Synthetic	Matrix of size (10000 × 2)	Auto	N/A
84	2023	Denoising and wavefield separation method for DAS VSP via deep learning	Preprocessing	Denoising, Wavefield Separation	Journal Article	Yinling Guo	China	China University of Mining & Technology (Beijing)	Enhance DAS data by denoising and wavefield separation	Field + Synthetic	Field + Synthetic	2D slices from DAS VSP images (128×128 windows)	Manually Label	N/A
85	2023	Denoising distributed acoustic sensing data using unsupervised deep learning	Preprocessing	Denoising	Journal Article	Liuqing Yang	China	China University of Petroleum (Beijing)	Attenuate complex DAS noise using unsupervised learning	Field + Synthetic	Field + Synthetic	1D sequences extracted from 2D DAS via patching	N/A	N/A
86	2023	Denoising of distributed acoustic sensing data using supervised deep learning	Preprocessing	Denoising	Journal Article	Liuqing Yang	China	China University of Petroleum (Beijing)	Suppress complex noise in DAS using supervised learning	Field + Synthetic	Field + Synthetic	2D seismic patches (48×48)	N/A	N/A
87	2023	Enhancing Earthquake Detection from Distributed Acoustic Sensing Data by Coherency Measure and Moving-Rank-Reduction Filtering	Event	Event Detection	Journal Article	Yangkang Chen	United States	The University of Texas	Improve earthquake detection in noisy DAS data through advanced filtering	Field	Field	2D seismic gathers	N/A	N/A
88	2023	Ensemble empirical mode decomposition and stacking model for filtering borehole distributed acoustic sensing records	Preprocessing	Denoising	Journal Article	Yi Zhao	China	Jilin University	Effective filtering and noise suppression for borehole DAS data	Field + Synthetic	Field + Synthetic	Time series (seismic traces, 2500 Hz sampling, 1 m spacing)	Manually Label	2
89	2023	Flexible and High-Gain DOFS Deconvolution Based on Data-Driven Denoising Prior	Preprocessing	Denoising, Signal Enhancement	Journal Article	H. Wu	China	Wuhan National Laboratory for Optoelectronics	Introduce a new iterative (HQS) + CNN denoising prior approach for flexible DOFS deconvolution. Define “deconvolution gain” that accounts for both resolution improvement and final SNR.	Field + Synthetic	Synthetic	1D time-series	N/A	N/A
90	2023	Global information correlated multi-scale integrated GAN for DAS seismic data denoising	Preprocessing	Denoising	Conference	N. Wu	China	Jilin University	Leverage an adversarial framework (GAN) with multi-scale feature extraction and global discrimination to remove complex DAS noise, preserving effective signals.	Field + Synthetic	Field + Synthetic	Not explicitly stated, but likely 2D time-space matrix based on figure and GAN processing	N/A	N/A
91	2023	Imaging distributed acoustic sensing-to-geophone conversion data: A field application to CO2 sequestration data	Preprocessing	Denoising, Signal Enhancement, Data Transformation	Journal Article	Y. Ma	United States	Aramco Research Center	Show that raw DAS data produce different imaging results than standard geophones; propose (1) physics-based or (2) deep-learning-based approach to convert DAS → geophone, so that conventional imaging (RTM, FWI) can be reused seamlessly.	Field	Field	Seismic traces	Manually Label	N/A
92	2023	Intelligent denoising of distributed acoustic sensing seismic data using deep learning	Preprocessing	Denoising	Conference	G. Chen	China	China University of Petroleum (Beijing)	Design a supervised deep neural network (encoder–decoder) trained with synthetic signals plus real field DAS noise to handle strong random and structured noise in field DAS seismic data, yielding high SNR improvement.	Field + Synthetic	Field + Synthetic	2D array	N/A	N/A
93	2023	Interpretable denoising of distributed acoustic sensing vertical seismic profile data using adaptive consistent prior net	Preprocessing	Denoising	Journal Article	Haitao Ma	China	Jilin University	Propose an adaptive consistency prior network (ACPNet) to achieve interpretable denoising of DAS-VSP data	Field + Synthetic	Field + Synthetic	2D patches	N/A	N/A

94	2023	Joint Denoising and Classification Network: Application to Microseismic Event Detection in Hydraulic Fracturing Distributed Acoustic Sensing Monitoring	Event	Event Detection	Journal Article	Shaojiang Wu	China	Chinese Academy of Sciences	Jointly denoise and classify microseismic events from DAS data	Field + Synthetic	Field + Synthetic	512×512 grayscale image segments	Manually Label	2
95	2023	Machine learning-assisted processing workflow for multi-fiber DAS microseismic data	Event	Event Detection	Journal Article	Yuanyuan Ma	Canada	University of Calgary	Improve event detection and analysis using machine learning for multi-fiber DAS microseismic data	Field	Field	2D images for CNN, 1D traces for U-Net	Manually Label	2
96	2023	Multiscale Encoder–Decoder Network for DAS Data Simultaneous Denoising and Reconstruction	Preprocessing	Denoising, Signal Enhancement, Data Quality Improvement, Reconstruction	Journal Article	Tie Zhong	China	Jilin University	Present MEDN (multiscale encoder–decoder network) to suppress noise and reconstruct missing traces in DAS data	Field + Synthetic	Field + Synthetic	Matrix patches from synthetic and field DAS recordings	N/A	N/A
97	2023	Multi-scale interactive network in the application of DAS seismic data processing	Preprocessing	Denoising, Signal Enhancement, High-Resolution Reconstruction	Journal Article	Hongzhou Wang	China	Jilin University	Propose a multi-scale interactive convolutional neural network (MSI-Net) to effectively attenuate background noise in DAS seismic data	Field + Synthetic	Field + Synthetic	2D DAS seismic data patches (400×400)	N/A	N/A
98	2023	Multiscale recurrent-guided denoising network for distributed acoustic sensing-vertical seismic profile background noise attenuation	Preprocessing	Denoising, weak signal enhancement	Journal Article	Ming Cheng	China	Jilin University	Develop RGSA-Net (recurrent-guided self-enhanced attention network) for complex DAS background noise suppression	Field + Synthetic	Field + Synthetic	64×64 2D patches	N/A	N/A
99	2023	Multistage residual network for intense distributed acoustic sensing background noise attenuation	Preprocessing	Denoising, signal enhancement, weak signal recovery	Journal Article	X. Dong	China	Jilin University	Improve denoising of complex DAS noise with a multistage network	Field + Synthetic	Field + Synthetic	64×64 patches	Manually Label	N/A
100	2023	Noise Suppression of DAS Seismic Data by Attention-guided Multi-scale Generative Adversarial Network	Preprocessing	Denoising	Journal Article	N. Wu	China	Jilin University	Develop an attention-guided multi-scale GAN for DAS noise removal	Field + Synthetic	Field + Synthetic	64 × 64 patches from synthetic noisy DAS data	Auto	N/A
101	2023	Removing multiple types of noise of distributed acoustic sensing seismic data using attention-guided denoising convolutional neural network	Preprocessing	Denoising	Journal Article	C. Wang	China	Jilin University	Propose an attention-based CNN (ADNet) to eliminate various DAS noise	Field + Synthetic	Field + Synthetic	2D seismic traces (patches of size 256×256)	Auto	N/A
102	2023	RMCHN: A Residual Modular Cascaded Heterogeneous Network for Noise Suppression in DAS-VSP Records	Preprocessing	Denoising	Journal Article	T. Zhong	China	Jilin University	Present RMCHN to remove complex DAS background noise and recover weak signals	Field + Synthetic	Field + Synthetic	2D DAS data, 64×64 patches	Auto	N/A
103	2023	Sample2Sample: An improved self-supervised denoising framework for random noise suppression in distributed acoustic sensing vertical seismic profile data	Preprocessing	Denoising (Random Noise Suppression)	Journal Article	Y. X. Zhao	China	Jilin University	Proposes a self-supervised method (Sample2Sample) to denoise DAS-VSP data without needing clean labels	Field + Synthetic	Field + Synthetic	2D Seismic Shot-Gather Images	N/A	N/A
104	2023	Seismic arrival-time picking on distributed acoustic sensing data using semi-supervised learning	Event	Phase Picking	Journal Article	Weiqiang Zhu	United States	California Institute of Technology (Caltech)	Enhance accuracy of seismic phase picking in DAS data using semi-supervised learning	Field	Field	2D DAS data matrix	Auto	3
105	2023	Seismic data denoising by combining self-supervised and supervised learning	Preprocessing	Denoising	Journal Article	Yen Sun	United States	TotalEnergies E&P Research & Technology USA	Combine self-supervised & supervised ML to remove coherent/incoherent noise	Field + Synthetic	Field + Synthetic	Shot gathers	N/A	N/A
106	2023	Self-Supervised Denoising for Distributed Acoustic Sensing Vertical Seismic Profile Data via Improved Blind Spot Network	Preprocessing	Denoising	Journal Article	Yuxing Zhao	China	Jilin University	Improve blind spot network for spatially correlated DAS noise removal	Field + Synthetic	Field + Synthetic	2D matrix of amplitude values; split into 256×256 patches	N/A	N/A

107	2023	Simultaneous denoising and reconstruction of distributed acoustic sensing seismic data via a multicascade deep-learning method	Preprocessing	Denoising and Reconstruction	Journal Article	Ming Cheng	China	Jilin University	Propose a multicascade CNN to handle noise + missing DAS traces simultaneously	Field + Synthetic	Field + Synthetic	128×128 patches (normalized amplitude)	N/A	N/A
108	2023	Simultaneous reconstruction and denoising for DAS-VSP seismic data by RRU-net	Preprocessing	Denoising and reconstruction	Journal Article	Huanhua n Tang	China	Chinese Academy of Sciences	Propose a method to jointly reconstruct missing DAS-VSP data & suppress noise	Field + Synthetic	Field + Synthetic	2D Hankel matrix	N/A	N/A
109	2023	SLKNet: An attention-based deep-learning framework for downhole distributed acoustic sensing data denoising	Preprocessing	Denoising, Signal Reconstruction	Journal Article	Liuqing Yang	China	China University of Petroleum (Beijing)	Develop a dense connection network with selective kernel blocks to remove multiple noise types from DAS data	Field + Synthetic	Field + Synthetic	2D Hankel matrix patches (26×26)	N/A	N/A
110	2023	Unpaired training: Optimize the seismic data denoising model without paired training data	Preprocessing	Denoising	Journal Article	Haitao Ma	China	Jilin University	Propose an attention cycleGAN for seismic data denoising without needing paired training data	Field + Synthetic	Field + Synthetic	256×256 image-like patches	N/A	N/A
111	2023	ϕ-OTDR pattern recognition based on CNN-LSTM	Event	Pattern Recognition	Journal Article	Ming Wang	China	Tianjin University	Improve accuracy of pattern recognition in fiber optic sensing for intrusion detection	Field	Field	1D time series (1000 sampling points per sample)	Manually label	6
112	2024	2D-SenseNet: A Simultaneous Demodulation and Denoising Network for DAS	Preprocessing	Simultaneous demodulation and denoising	Journal Article	Yongxin Liang	China	University of Electronic Science and Technology of China	Present a supervised deep learning method for combined demodulation and denoising of DAS signals	Field + Synthetic	Synthetic	Matrix (10000 × 19200 × 2)	Auto	N/A
113	2024	A Dual Attention Denoising Network for DAS VSP Signal Recovery and Its Interpretability Analysis	Preprocessing	Denoising, Signal Enhancement	Journal Article	Man Zhang	China	Jilin University	Design a dual attention denoising network that recovers weak DAS VSP signals and provides interpretability	Field + Synthetic	Field + Synthetic	Matrix/ Image -like seismic segments	N/A	N/A
114	2024	A Universal Denoiser for DAS-VSP Data Based on Semantic Mask and Random Mask Training	Preprocessing	Denoising, Signal Enhancement	Journal Article	Fuyao Sun	China	Jilin University	Propose a universal DL method to suppress complex DAS-VSP noise via semantic masks and random masking	Field + Synthetic	Field + Synthetic	Denoised 2D seismic trace matrices	Manually label	2
115	2024	Analysis of DAS Seismic Noise Generation and Elimination Process Based on Mean-SDE Diffusion Model	Preprocessing	Denoising, Signal Enhancement, Signal Recovery	Journal Article	Qiankun Feng	China	Jilin University	Introduce a Mean-SDE diffusion model to tackle DAS seismic noise with limited training data	Field + Synthetic	Field + Synthetic	128×128 patches	Auto	N/A
116	2024	Cosine Spectral Association Network for DAS VSP Data High-Precision Recovery	Preprocessing	Denoising, Weak Signal Recovery	Journal Article	Jilei Sui	China	Jilin University	Combine time-offset domain and frequency-domain features for robust DAS VSP signal recovery	Field + Synthetic	Field + Synthetic	2D Matrix	N/A	N/A
117	2024	DAS Noise Suppression Network Based on Distributing-Local-Attention Expansion	Preprocessing	Denoising	Journal Article	Juan Li	China	Jilin University	Fuse low-level (Conv) and high-level (Transformer) features to handle non-uniform DAS noise	Field + Synthetic	Field + Synthetic	64 × 64 matrix samples	N/A	N/A
118	2024	DAS Seismic Signal Recovery with Non-Uniform Noise Based on High-Low Level Feature Fusion Model	Preprocessing	Denoising, Signal Recovery	Journal Article	Juan Li	China	Jilin University	Propose a U-shaped network (Urefiner) combining local detail and global attention for DAS noise suppression	Field + Synthetic	Field + Synthetic	2D image patches (128×128)	N/A	N/A
119	2024	DASEventNet: AI-Based Microseismic Detection on Distributed Acoustic Sensing Data from the Utah FORGE Well 16A (78)-32 Hydraulic Stimulation	Event	Event Detection	Journal Article	Pengliang Yu	United States	Pennsylvania State University	Develop a ResNet-based model (DASEventNet) for enhanced microseismic detection in DAS data	Field	Field	2D arrays (1021 × 2000)	Manually label	2
120	2024	DAS-VSP Coupled Noise Suppression Based on U-Net Network	Preprocessing	Denoising	Journal Article	Jing-Xia Xu	China	Zhejiang University	Present a U-Net-based approach with self-attention to suppress coupled noise in DAS VSP data	Field + Synthetic	Synthetic	2D seismic images	Manually label	N/A
121	2024	Detection of microseismic events in continuous DAS data using convolutional neural networks	Event	Event Detection	Journal Article	N. Boitz	Germany	Free University of Berlin	Lower magnitude detection thresholds in DAS-based microseismic monitoring	Field	Field	DAS images (5000 × 400 matrix of strain data)	N/A	3
122	2024	Detection of microseismic events in continuous DAS recordings using semantic image segmentation	Event	Event Detection	Journal Article	William Tegtow	Germany	Free University of Berlin	Develop semantic image segmentation for microseismic detection in continuous DAS data	Field + Synthetic	Synthetic	2D DAS images (space × time)	Auto	2

123	2024	Diverse Noise Suppression Based on SKUformer for DAS VSP Data	Preprocessing	Denoising	Journal Article	Tingting Bai	China	Xi'an Jiaotong University	Develop a U-shaped transformer-based model (SKUformer) to handle diverse noise in DAS VSP data	Field + Synthetic	Field + Synthetic	2D matrix (H×W)	Auto	N/A
124	2024	Efficient Signal-to-Noise Ratio Enhancement Model for Severely Contaminated Distributed Acoustic Sensing Seismic Data Based on Heterogeneous Knowledge Distillation	Preprocessing	Denoising, Signal Enhancement	Journal Article	Qian Li	China	Jilin University	Leverage teacher-student knowledge distillation to enhance low-SNR DAS VSP data reconstruction	Field + Synthetic	Field + Synthetic	128 × 128 matrices	Auto	N/A
125	2024	Environmental Surveillance through Machine Learning-Empowered Utilization of Optical Networks	Event	Event Detection	Journal Article	Hasan Awan	Italy	Polytechnic University of Turin	Early detection and localization of earthquakes using optical fiber networks and machine learning	Synthetic	Synthetic	Time-series from Stokes parameters via simulations	Manually label	4
126	2024	Fast earthquake recognition method based on DAS and one dimensional QRE-net	Event	Event Recognition	Journal Article	Yage Zhan	China	Donghua University	Enhance earthquake recognition speed and accuracy	Field	Field	Time-series (normalized), 1D vectors (length = 1000 for 200 Hz)	Manually label	2
127	2024	Graph Neural Networks for Microseismic Event Detection: Focusing on Distributed Acoustic Sensing Data	Event	Event Detection	Conference	M.S.B Shahabudin	Malaysia	Universiti Teknologi PETRONAS	Improve microseismic detection accuracy with graph neural networks	Field	Field	Graph-structured DAS data	Manually label	2
128	2024	Improving Distributed Acoustic Sensing Data Quality with Self-Supervised Learning	Preprocessing	Denoising	Journal Article	Haitao Ma	China	Jilin University	Develop a self-supervised network (BSV) to remove random noise from DAS VSP data	Field + Synthetic	Field + Synthetic	Image-like Patches (256×256 patches)	N/A	N/A
129	2024	Learnable Dual Attention Fusion Network for Borehole Distributed Acoustic Sensing Systems Data Reconstruction	Preprocessing	Denoising, Signal Reconstruction	Journal Article	Haitao Ma	China	Jilin University	Propose a dual-attention fusion network (LDAFNet) for improved DAS noise attenuation	Field + Synthetic	Synthetic	128×128 patches extracted from DAS records	Auto	N/A
130	2024	Learning Gradient Descent to Optimize DAS Signal Estimation	Preprocessing	Denoising, Signal Estimation	Journal Article	Haitao Ma	China	Jilin University	Learn an optimization-driven approach (GDONet) for recovering high-quality DAS signals	Field + Synthetic	Field + Synthetic	128×128 windows (2D DAS patches)	Auto	N/A
131	2024	MSAACNN for Intense Noise Suppression in DAS-VSP Records	Preprocessing	Denoising	Journal Article	Haodong He	China	Northeast Electric Power University	Propose a multiscale sparse asymmetric attention CNN (MSAACNN) to handle strong noise in DAS-VSP	Field + Synthetic	Field + Synthetic	Matrix patches	Auto	N/A
132	2024	Multiple Noise Reduction for Distributed Acoustic Sensing Data Processing Through Densely Connected Residual Convolutional Networks	Preprocessing	Denoising, Signal Enhancement	Journal Article	Tianye Huang	China	China University of Geosciences (Wuhan)	Present a supervised CNN-based approach with dense connections to remove multiple noise types in DAS data	Field + Synthetic	Field + Synthetic	SEGY (field), image-style patches	Auto and manually	N/A
133	2024	RDA-Net: A Multi-Cascade Network for DAS Background Noise Attenuation	Preprocessing	Denoising, Signal Enhancement, Weak Signal Recovery, Data Quality Improvement	Journal Article	Tie Zhong	China	Northeast Electric Power University	Improve DAS record quality by eliminating strong background noise and recovering weak reflections	Field + Synthetic	Field + Synthetic	64×64 patches from 2D DAS data	Auto	N/A
134	2024	Removing Instrumental Noise in Distributed Acoustic Sensing Data: A Comparison Between Two Deep Learning Approaches	Preprocessing	Denoising (Instrumental noise removal)	Journal Article	Xihao Gu	Australia	Curtin University	Compare two deep learning strategies (supervised vs. Noise2Noise) for effective removal of DAS interrogator noise	Field + Synthetic	Field + Synthetic	2D patches of strain rate data	Auto	N/A
135	2024	Seismic Interpolation Transformer for Consecutively Missing Data: A Case Study in DAS-VSP Data	Preprocessing	Signal reconstruction	Journal Article	Jie Zhang	China	Jilin University	Propose a transformer-based method (SIT) to reconstruct consecutive missing VSP data under strong noise	Field + Synthetic	Synthetic	2D patches	N/A	N/A
136	2024	SelfTexture: Self-Supervised Learning for Spatially Correlated Noise Removal of DAS VSP Data via Adaptive Texture Analysis	Preprocessing	Denoising	Journal Article	Shiqi Zhu	China	Xi'an Jiaotong University	Develop a self-supervised approach (SelfTexture) to remove spatially correlated noise using texture analysis in DAS VSP	Field + Synthetic	Field + Synthetic	N/A	N/A	N/A

137	2024	Semi-Supervised DAS VSP Data Denoising Using Signal and Noise Distribution Difference	Preprocessing	Denoising	Journal Article	Man Zhang	China	Jilin University	Develop a semi-supervised network (SSDN) to suppress multi-type DAS noise while reducing labeled-data reliance	Field + Synthetic	Field + Synthetic	2D matrix	N/A	N/A
138	2024	SigRecover: Recovering Signal from Noise in Distributed Acoustic Sensing Data Processing	Preprocessing	Signal enhancement, Denoising, Signal recovery from removed noise	Journal Article	Yangkang Chen	United States	University of Texas	Propose a dictionary-learning approach (SigRecover) to retrieve coherent signals from noise that was removed	Field	N/A	2D DAS data matrix	N/A	N/A
139	2024	Spiking Neural Network for Microseismic Events Detection Using Distributed Acoustic Sensing Data	Event	Event Detection	Conference	M.S.B Shahabudin	Malaysia	Universiti Teknologi PETRONAS	Improve precision and interpretability of microseismic event detection using SNN	Field	Field	SEGY format, converted into 256×256 images for model input	N/A	2
140	2024	Subspace Projection Attention Network: Deep Weak Signal Recovery from Complicated Downhole Distributed Acoustic Sensing Data	Preprocessing	Denoising, weak signal recovery	Journal Article	Xiang Liu	China	Jilin University	Design SPANet for accurate noise reduction and enhanced recovery of weak seismic events in downhole DAS data	Field + Synthetic	Field + Synthetic	2D matrix, 192 × 192 patches	Auto and manually	N/A
141	2024	The DAS With Deep Neural Network Based on DSR-Net for Fast Earthquake Recognition	Event	Event Detection	Journal Article	Yage Zhan	China	Donghua University	Fast earthquake recognition using DAS and deep neural networks	Field	Field	2D STFT images	N/A	2
142	2024	The Improved Intrinsic Time-Scale Analysis for Multidimensional Signal-to-Noise Feature Separation of Borehole Seismic Data	Preprocessing	Denoising, Signal Enhancement, Feature Classification	Journal Article	Zhang Wei	China	Jilin University	Enhance intrinsic time-scale decomposition for improved separation of noise and signal features in borehole seismic data	Field + Synthetic	Field + Synthetic	N/A	Manually label	2
143	2024	Transfer Learning for Seismic Phase Picking with Significantly Higher Precision in Faraway Seismic Stations	Event	Phase Picking	Journal Article	Omar M. Saad	Saudi Arabia	King Abdullah University of Science and Technology (KAUST)	Improve seismic phase picking accuracy using transfer learning	Field	Field	Raw waveform, 3-channel, 100 Hz, 60-s window	Manually label	3
144	2024	Transfer Learning-Based Seismic Phase Detection Algorithm for Distributed Acoustic Sensing Microseismic Data	Event	Phase Picking	Journal Article	Yongseog Choi	South Korea	Hanyang University	Enhance seismic phase detection in DAS microseismic data via transfer learning	Field + Synthetic	Field	1-minute windows,	Manually label	3
145	2024	Wavefield Reconstruction of Distributed Acoustic Sensing: Lossy Compression, Wavefield Separation, and Edge Computing	Preprocessing	Denoising, Data Compression, Wavefield Reconstruction, Feature Enhancement	Journal Article	Yiyu Ni	United States	University of Washington	Develop a shallow recurrent decoder for reconstructing DAS wavefields from sparse channels, enabling data compression and wavefield separation	Field	Field	HDF5	N/A	N/A
146	2024	Weak Signals Recovery of Downhole DAS With Scale-Weighted Nonlocal Selective Attention	Preprocessing	Denoising, weak signal recovery	Journal Article	Guijin Yao	China	Jilin University	Propose a novel subspace projection attention network for noise suppression and weak signal recovery in downhole DAS data	Field + Synthetic	Field + Synthetic	2D seismic data patches	Auto	N/A
147	2025	Deep Learning for Seismic Data Compression in Distributed Acoustic Sensing	Preprocessing	Data Compression	Journal Article	Y. Chen	United States	University of Texas	Propose a deep-learning-based solution for high compression ratios on large DAS data while preserving key seismological signals	Field	Field	SEGY / Binary	N/A	N/A
148	2025	Distributed acoustic sensing data enhancement using an iterative dictionary learning method	Preprocessing	Denoising, Signal Enhancement, Data Quality Improvement	Journal Article	Z. Feng	China	Anyang Institute of Technology	Enhance DAS data by robustly removing complex noise while preserving weak signals, using an iterative dictionary-learning-based approach	Field + Synthetic	Field + Synthetic	2D seismic trace arrays	N/A	N/A
149	2021	Uncovering the microseismic signals from noisy data for high fidelity 3d source-location imaging using deep learning	Preprocessing	Denoising, Signal Enhancement	Journal Article	Omar M. Saad	Egypt	NRIAG	Build an unsupervised VAE + SE network that enhances S/N of micro-seismic traces and, in turn, sharpens 3-D RTM imaging	Field + Synthetic	N/A	2D patches. converted to 1D vectors	N/A	N/A