Timo Gerkmann

List of Publications by Year
in descending order

90 papers	2,202 citations	430874 18 h-index	377865 34 g-index
91 all docs	91 docs citations	91 times ranked	1004 citing authors

#	ARTICLE	IF	CITATIONS
1	Integrating Statistical Uncertainty into Neural Network-Based Speech Enhancement. , 2022, , .		5
2	Deep Iterative Phase Retrieval for Ptychography. , 2022, , .		3
3	Customizable End-To-End Optimization Of Online Neural Network-Supported Dereverberation For Hearing Devices. , 2022, , .		2
4	Nonlinear Spatial Filtering in Multichannel Speech Enhancement. IEEE/ACM Transactions on Audio Speech and Language Processing, 2021, 29, 1795-1805.	5.8	7
5	SNR-Based Features and Diverse Training Data for Robust DNN-Based Speech Enhancement. IEEE/ACM Transactions on Audio Speech and Language Processing, 2021, 29, 1937-1949.	5.8	11
6	Efficient Joint Estimation of Tracer Distribution and Background Signals in Magnetic Particle Imaging Using a Dictionary Approach. IEEE Transactions on Medical Imaging, 2021, 40, 3568-3579.	8.9	9
7	Improving mix-and-separate training in audio-visual sound source separation with an object prior. , 2021, , .		1
8	See the Silence: Improving Visual-Only Voice Activity Detection by Optical Flow and RGB Fusion. Lecture Notes in Computer Science, 2021, , 41-51.	1.3	0
9	Dictionary-Based Background Signal Estimation For Magnetic Particle Imaging. , 2021, , .		0
10	Variational Autoencoder for Speech Enhancement with a Noise-Aware Encoder. , 2021, , .		22
11	Guided Variational Autoencoder for Speech Enhancement with a Supervised Classifier. , 2021, , .		9
12	Disentanglement Learning for Variational Autoencoders Applied to Audio-Visual Speech Enhancement. , 2021, , .		8
13	Nonlinear Spatial Filtering for Multichannel Speech Enhancement in Inhomogeneous Noise Fields. , 2020, , .		2
14	A Survey on Probabilistic Models in Human Perception and Machines. Frontiers in Robotics and AI, 2020, 7, 85.	3.2	3
15	A Multi-Phase Gammatone Filterbank for Speech Separation Via Tasnet. , 2020, , .		26
16	Robust Robotic Pouring using Audition and Haptics. , 2020, , .		11
17	Correction of linear system drifts in magnetic particle imaging. Physics in Medicine and Biology, 2019, 64, 125013.	3.0	10
18	An Analysis of Noise-aware Features in Combination with the Size and Diversity of Training Data for DNN-based Speech Enhancement. , 2019, , .		6

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19	Making Sense of Audio Vibration for Liquid Height Estimation in Robotic Pouring. , 2019, , .		18
20	On the Importance of Super-Gaussian Speech Priors for Machine-Learning Based Speech Enhancement. IEEE/ACM Transactions on Audio Speech and Language Processing, 2018, 26, 357-366.	5.8	18
21	On Speech Enhancement Under PSD Uncertainty. IEEE/ACM Transactions on Audio Speech and Language Processing, 2018, 26, 1144-1153.	5.8	7
22	Comparison of single-microphone noise reduction schemes: can hearing impaired listeners tell the difference?. International Journal of Audiology, 2018, 57, S55-S61.	1.7	9
23	Evaluation of combined dynamic compression and single channel noise reduction for hearing aid applications. International Journal of Audiology, 2018, 57, S43-S54.	1.7	5
24	Weighted and Multi-Task Loss for Rare Audio Event Detection. , 2018, , .		17
25	Nonlinear Speech Enhancement Under Speech PSD Uncertainty. , 2018, , .		0
26	A Study on the Benefits of Phase-Aware Speech Enhancement in Challenging Noise Scenarios. Lecture Notes in Computer Science, 2018, , 407-416.	1.3	0
27	An Analysis of Adaptive Recursive Smoothing with Applications to Noise PSD Estimation. IEEE/ACM Transactions on Audio Speech and Language Processing, 2017, 25, 397-408.	5.8	4
28	A General Framework for Incorporating Time–Frequency Domain Sparsity in Multichannel Speech Dereverberation. AES: Journal of the Audio Engineering Society, 2017, 65, 17-30.	1.0	6
29	Synthesis of Perceptually Plausible Multichannel Noise Signals Controlled by Real World Statistical Noise Properties. AES: Journal of the Audio Engineering Society, 2017, 65, 914-928.	1.0	2
30	Impulsive Disturbances in Audio Archives: Signal Classification for Automatic Restoration. AES: Journal of the Audio Engineering Society, 2017, 65, 826-840.	1.0	5
31	Single-microphone speech enhancement using MVDR filtering and Wiener post-filtering. , 2016, , .		4
32	An evaluation of the perceptual quality of phase-aware single-channel speech enhancement. Journal of the Acoustical Society of America, 2016, 140, EL364-EL369.	1.1	7
33	On MMSE-Based Estimation of Amplitude and Complex Speech Spectral Coefficients Under Phase-Uncertainty. IEEE/ACM Transactions on Audio Speech and Language Processing, 2016, 24, 2251-2262.	5.8	21
34	BIAS correction methods for adaptive recursive smoothing with applications in noise PSD estimation. , 2016, , .		0
35	Perceptual and instrumental evaluation of the perceived level of reverberation. , 2016, , .		9
36	Sparse reconstruction of quantized speech signals. , 2016, , .		5

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37	Constrained multi-channel linear prediction for adaptive speech dereverberation. , 2016, , .		4
38	Fundamental Frequency Informed Speech Enhancement in a Flexible Statistical Framework. IEEE/ACM Transactions on Audio Speech and Language Processing, 2016, 24, 940-951.	5.8	7
39	MMSE-optimal combination of wiener filtering and harmonic model based speech enhancement in a general framework. , 2015, , .		3
40	Late reverberant spectral variance estimation using acoustic channel equalization. , 2015, , .		1
41	Combination of MVDR beamforming and single-channel spectral processing for enhancing noisy and reverberant speech. Eurasip Journal on Advances in Signal Processing, 2015, 2015, .	1.7	46
42	Comparing Binaural Pre-processing Strategies II. Trends in Hearing, 2015, 19, 233121651561791.	1.3	25
43	Comparing Binaural Pre-processing Strategies I. Trends in Hearing, 2015, 19, 233121651561791.	1.3	34
44	Noise Power Spectral Density Estimation Using MaxNSR Blocking Matrix. IEEE/ACM Transactions on Audio Speech and Language Processing, 2015, 23, 1493-1508.	5.8	31
45	Group sparsity for mimo speech dereverberation. , 2015, , .		6
46	On the bias of adaptive first-order recursive smoothing. , 2015, , .		4
47	Phase Processing for Single-Channel Speech Enhancement: History and recent advances. IEEE Signal Processing Magazine, 2015, 32, 55-66.	5.6	179
48	Two-Stage Filter-Bank System for Improved Single-Channel Noise Reduction in Hearing Aids. IEEE/ACM Transactions on Audio Speech and Language Processing, 2015, 23, 383-393.	5.8	10
49	Multi-Channel Linear Prediction-Based Speech Dereverberation With Sparse Priors. IEEE/ACM Transactions on Audio Speech and Language Processing, 2015, 23, 1509-1520.	5.8	86
50	Cepstral noise subtraction for robust automatic speech recognition. , 2015, , .		3
51	Multi-channel PSD estimators for speech dereverberation - A theoretical and experimental comparison. , 2015, , .		12
52	Multi-channel linear prediction-based speech dereverberation with low-rank power spectrogram approximation. , 2015, , .		6
53	Utilizing spectro-temporal correlations for an improved speech presence probability based noise power estimation. , 2015, , .		4
54	Front-end technologies for robust ASR in reverberant environments—spectral enhancement-based dereverberation and auditory modulation filterbank features. Eurasip Journal on Advances in Signal Processing, 2015, 2015, .	1.7	18

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55	Frequency-domain single-channel inverse filtering for speech dereverberation: Theory and practice. , 2014, , .		17
56	STFT Phase Reconstruction in Voiced Speech for an Improved Single-Channel Speech Enhancement. IEEE/ACM Transactions on Audio Speech and Language Processing, 2014, 22, 1931-1940.	5.8	162
57	Single channel noise reduction based on an auditory filterbank. , 2014, , .		6
58	MMSE-optimal enhancement of complex speech coefficients with uncertain prior knowledge of the clean speech phase. , 2014, , .		17
59	A study on speech quality and speech intelligibility measures for quality assessment of single-channel dereverberation algorithms. , 2014, , .		16
60	A posteriori voiced/unvoiced probability estimation based on a sinusoidal model. , 2014, , .		2
61	Bayesian Estimation of Clean Speech Spectral Coefficients Given a Priori Knowledge of the Phase. IEEE Transactions on Signal Processing, 2014, 62, 4199-4208.	5.3	44
62	Subjective speech quality and speech intelligibility evaluation of single-channel dereverberation algorithms. , 2014, , .		22
63	Generalization of supervised learning for binary mask estimation. , 2014, , .		6
64	Speech dereverberation with convolutive transfer function approximation using map and variational deconvolution approaches. , 2014, , .		2
65	Speech dereverberation with multi-channel linear prediction and sparse priors for the desired signal. , 2014, , .		5
66	A posteriori speech presence probability estimation based on averaged observations and a super-Gaussian speech model. , 2014, , .		2
67	Privacy-preserving distributed speech enhancement forwireless sensor networks by processing in the encrypted domain. , 2013, , .		10
68	MMSE-Optimal Spectral Amplitude Estimation Given the STFT-Phase. IEEE Signal Processing Letters, 2013, 20, 129-132.	3.6	101
69	DFT-Domain Based Single-Microphone Noise Reduction for Speech Enhancement: A Survey of the State of the Art. Synthesis Lectures on Speech and Audio Processing, 2013, 9, 1-80.	0.4	66
70	On the relation between speech corruption models in the spectral and the cepstral domain. , 2013, , .		1
71	METHOD FOR DETERMINING UNBIASED SIGNAL AMPLITUDE ESTIMATES AFTER CEPSTRAL VARIANCE MODIFICATION. Journal of the Acoustical Society of America, 2013, 133, 2519.	1.1	0
72	Improved mmse-based noise PSD tracking using temporal cepstrum smoothing. , 2012, , .		9

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73	Phase estimation in speech enhancement &#x2014; Unimportant, important, or impossible?. , 2012, , .		14
74	Unbiased MMSE-Based Noise Power Estimation With Low Complexity and Low Tracking Delay. IEEE Transactions on Audio Speech and Language Processing, 2012, 20, 1383-1393.	3.2	415
75	Noise Correlation Matrix Estimation for Multi-Microphone Speech Enhancement. IEEE Transactions on Audio Speech and Language Processing, 2012, 20, 223-233.	3.2	66
76	A new approach for speech enhancement based on a constrained Nonnegative Matrix Factorization. , 2011, , .		11
77	Noise power estimation based on the probability of speech presence. , 2011, , .		84
78	A new linear MMSE filter for single channel speech enhancement based on Nonnegative Matrix Factorization. , 2011, , .		38
79	Estimation of the noise correlation matrix. , 2011, , .		3
80	Blind source separation of nondisjoint sources in the time-frequency domain with model-based determination of source contribution. , 2011, , .		0
81	Speech presence probability estimation based on temporal cepstrum smoothing. , 2010, , .		13
82	Multi-microphone maximum a posteriori fundamental frequency estimation in the cepstral domain. , 2009, , .		2
83	On the Statistics of Spectral Amplitudes After Variance Reduction by Temporal Cepstrum Smoothing and Cepstral Nulling. IEEE Transactions on Signal Processing, 2009, 57, 4165-4174.	5.3	50
84	Improved *A Posteriori* Speech Presence Probability Estimation Based on a Likelihood Ratio With Fixed Priors. IEEE Transactions on Audio Speech and Language Processing, 2008, 16, 910-919.	3.2	88
85	A novel a priori SNR estimation approach based on selective cepstro-temporal smoothing. Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing, 2008, , .	1.8	80
86	Cepstral Smoothing of Spectral Filter Gains for Speech Enhancement Without Musical Noise. IEEE Signal Processing Letters, 2007, 14, 1036-1039.	3.6	64
87	MixMax Approximation as a Super-Gaussian Log-Spectral Amplitude Estimator for Speech Enhancement. , 0, , .		1
88	Influence of Speaker-Specific Parameters on Speech Separation Systems. , 0, , .		5
89	On Nonlinear Spatial Filtering in Multichannel Speech Enhancement. , 0, , .		3
90	Speech Enhancement with Stochastic Temporal Convolutional Networks. , 0, , .		14