

Timo Gerkmann

List of Publications by Year in descending order

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papers

2,202
citations

430874

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34
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91
all docs

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docs citations

91
times ranked

1004
citing authors

#	ARTICLE	IF	CITATIONS
1	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
2	Phase Processing for Single-Channel Speech Enhancement: History and recent advances. IEEE Signal Processing Magazine, 2015, 32, 55-66.	5.6	179
3	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
4	MMSE-Optimal Spectral Amplitude Estimation Given the STFT-Phase. IEEE Signal Processing Letters, 2013, 20, 129-132.	3.6	101
5	Improved $\langle i \rangle$ A Posteriori $\langle /i \rangle$ 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
6	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
7	Noise power estimation based on the probability of speech presence. , 2011, , .		84
8	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
9	Noise Correlation Matrix Estimation for Multi-Microphone Speech Enhancement. IEEE Transactions on Audio Speech and Language Processing, 2012, 20, 223-233.	3.2	66
10	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
11	Cepstral Smoothing of Spectral Filter Gains for Speech Enhancement Without Musical Noise. IEEE Signal Processing Letters, 2007, 14, 1036-1039.	3.6	64
12	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
13	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
14	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
15	A new linear MMSE filter for single channel speech enhancement based on Nonnegative Matrix Factorization. , 2011, , .		38
16	Comparing Binaural Pre-processing Strategies I. Trends in Hearing, 2015, 19, 233121651561791.	1.3	34
17	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
18	A Multi-Phase Gammatone Filterbank for Speech Separation Via Tasnet. , 2020, , .		26

#	ARTICLE	IF	CITATIONS
19	Comparing Binaural Pre-processing Strategies II. Trends in Hearing, 2015, 19, 233121651561791.	1.3	25
20	Subjective speech quality and speech intelligibility evaluation of single-channel dereverberation algorithms. , 2014, , .		22
21	Variational Autoencoder for Speech Enhancement with a Noise-Aware Encoder. , 2021, , .		22
22	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
23	Front-end technologies for robust ASR in reverberant environmentsâ€™ spectral enhancement-based dereverberation and auditory modulation filterbank features. Eurasip Journal on Advances in Signal Processing, 2015, 2015, .	1.7	18
24	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
25	Making Sense of Audio Vibration for Liquid Height Estimation in Robotic Pouring. , 2019, , .		18
26	Frequency-domain single-channel inverse filtering for speech dereverberation: Theory and practice. , 2014, , .		17
27	MMSE-optimal enhancement of complex speech coefficients with uncertain prior knowledge of the clean speech phase. , 2014, , .		17
28	Weighted and Multi-Task Loss for Rare Audio Event Detection. , 2018, , .		17
29	A study on speech quality and speech intelligibility measures for quality assessment of single-channel dereverberation algorithms. , 2014, , .		16
30	Phase estimation in speech enhancement — Unimportant, important, or impossible?. , 2012, , .		14
31	Speech Enhancement with Stochastic Temporal Convolutional Networks. , 0, , .		14
32	Speech presence probability estimation based on temporal cepstrum smoothing. , 2010, , .		13
33	Multi-channel PSD estimators for speech dereverberation - A theoretical and experimental comparison. , 2015, , .		12
34	A new approach for speech enhancement based on a constrained Nonnegative Matrix Factorization. , 2011, , .		11
35	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
36	Robust Robotic Pouring using Audition and Haptics. , 2020, , .		11

#	ARTICLE	IF	CITATIONS
37	Privacy-preserving distributed speech enhancement for wireless sensor networks by processing in the encrypted domain. , 2013, , .		10
38	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
39	Correction of linear system drifts in magnetic particle imaging. Physics in Medicine and Biology, 2019, 64, 125013.	3.0	10
40	Improved mmse-based noise PSD tracking using temporal cepstrum smoothing. , 2012, , .		9
41	Perceptual and instrumental evaluation of the perceived level of reverberation. , 2016, , .		9
42	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
43	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
44	Guided Variational Autoencoder for Speech Enhancement with a Supervised Classifier. , 2021, , .		9
45	Disentanglement Learning for Variational Autoencoders Applied to Audio-Visual Speech Enhancement. , 2021, , .		8
46	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
47	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
48	On Speech Enhancement Under PSD Uncertainty. IEEE/ACM Transactions on Audio Speech and Language Processing, 2018, 26, 1144-1153.	5.8	7
49	Nonlinear Spatial Filtering in Multichannel Speech Enhancement. IEEE/ACM Transactions on Audio Speech and Language Processing, 2021, 29, 1795-1805.	5.8	7
50	Single channel noise reduction based on an auditory filterbank. , 2014, , .		6
51	Generalization of supervised learning for binary mask estimation. , 2014, , .		6
52	Group sparsity for mimo speech dereverberation. , 2015, , .		6
53	Multi-channel linear prediction-based speech dereverberation with low-rank power spectrogram approximation. , 2015, , .		6
54	A General Framework for Incorporating Time- ω Frequency Domain Sparsity in Multichannel Speech Dereverberation. AES: Journal of the Audio Engineering Society, 2017, 65, 17-30.	1.0	6

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55	An Analysis of Noise-aware Features in Combination with the Size and Diversity of Training Data for DNN-based Speech Enhancement. , 2019, , .		6
56	Speech dereverberation with multi-channel linear prediction and sparse priors for the desired signal. , 2014, , .		5
57	Sparse reconstruction of quantized speech signals. , 2016, , .		5
58	Impulsive Disturbances in Audio Archives: Signal Classification for Automatic Restoration. AES: Journal of the Audio Engineering Society, 2017, 65, 826-840.	1.0	5
59	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
60	Influence of Speaker-Specific Parameters on Speech Separation Systems. , 0, , .		5
61	Integrating Statistical Uncertainty into Neural Network-Based Speech Enhancement. , 2022, , .		5
62	On the bias of adaptive first-order recursive smoothing. , 2015, , .		4
63	Utilizing spectro-temporal correlations for an improved speech presence probability based noise power estimation. , 2015, , .		4
64	Single-microphone speech enhancement using MVDR filtering and Wiener post-filtering. , 2016, , .		4
65	Constrained multi-channel linear prediction for adaptive speech dereverberation. , 2016, , .		4
66	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
67	Estimation of the noise correlation matrix. , 2011, , .		3
68	MMSE-optimal combination of wiener filtering and harmonic model based speech enhancement in a general framework. , 2015, , .		3
69	Cepstral noise subtraction for robust automatic speech recognition. , 2015, , .		3
70	A Survey on Probabilistic Models in Human Perception and Machines. Frontiers in Robotics and AI, 2020, 7, 85.	3.2	3
71	On Nonlinear Spatial Filtering in Multichannel Speech Enhancement. , 0, , .		3
72	Deep Iterative Phase Retrieval for Ptychography. , 2022, , .		3

#	ARTICLE	IF	CITATIONS
73	Multi-microphone maximum a posteriori fundamental frequency estimation in the cepstral domain. , 2009, , .		2
74	A posteriori voiced/unvoiced probability estimation based on a sinusoidal model. , 2014, , .		2
75	Speech dereverberation with convolutive transfer function approximation using map and variational deconvolution approaches. , 2014, , .		2
76	A posteriori speech presence probability estimation based on averaged observations and a super-Gaussian speech model. , 2014, , .		2
77	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
78	Nonlinear Spatial Filtering for Multichannel Speech Enhancement in Inhomogeneous Noise Fields. , 2020, , .		2
79	Customizable End-To-End Optimization Of Online Neural Network-Supported Dereverberation For Hearing Devices. , 2022, , .		2
80	On the relation between speech corruption models in the spectral and the cepstral domain. , 2013, , .		1
81	Late reverberant spectral variance estimation using acoustic channel equalization. , 2015, , .		1
82	Improving mix-and-separate training in audio-visual sound source separation with an object prior. , 2021, , .		1
83	MixMax Approximation as a Super-Gaussian Log-Spectral Amplitude Estimator for Speech Enhancement. , 0, , .		1
84	Blind source separation of nondisjoint sources in the time-frequency domain with model-based determination of source contribution. , 2011, , .		0
85	BIAS correction methods for adaptive recursive smoothing with applications in noise PSD estimation. , 2016, , .		0
86	Nonlinear Speech Enhancement Under Speech PSD Uncertainty. , 2018, , .		0
87	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
88	Dictionary-Based Background Signal Estimation For Magnetic Particle Imaging. , 2021, , .		0
89	METHOD FOR DETERMINING UNBIASED SIGNAL AMPLITUDE ESTIMATES AFTER CEPSTRAL VARIANCE MODIFICATION. Journal of the Acoustical Society of America, 2013, 133, 2519.	1.1	0
90	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