Ba-Ngu Vo

List of Publications by Year
in descending order

129 papers	11,560 citations	57631 44 h-index	64668 79 g-index
162 all docs	162 docs citations	162 times ranked	2943 citing authors

#	Article	IF	Citations
1	Sequential monte carlo methods for multi-target filtering with random finite sets. IEEE Transactions on Aerospace and Electronic Systems, 2005, 41, 1224-1245.	2.6	953
2	A Consistent Metric for Performance Evaluation of Multi-Object Filters. IEEE Transactions on Signal Processing, 2008, 56, 3447-3457.	3.2	930
3	Labeled Random Finite Sets and Multi-Object Conjugate Priors. IEEE Transactions on Signal Processing, 2013, 61, 3460-3475.	3.2	661
4	The Cardinality Balanced Multi-Target Multi-Bernoulli Filter and Its Implementations. IEEE Transactions on Signal Processing, 2009, 57, 409-423.	3.2	635
5	Analytic Implementations of the Cardinalized Probability Hypothesis Density Filter. IEEE Transactions on Signal Processing, 2007, 55, 3553-3567.	3.2	615
6	Labeled Random Finite Sets and the Bayes Multi-Target Tracking Filter. IEEE Transactions on Signal Processing, 2014, 62, 6554-6567.	3.2	542
7	The Labeled Multi-Bernoulli Filter. IEEE Transactions on Signal Processing, 2014, 62, 3246-3260.	3.2	524
8	Stem cell migration and mechanotransduction on linear stiffness gradient hydrogels. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 5647-5652.	3.3	370
9	Joint Detection and Estimation of Multiple Objects From Image Observations. IEEE Transactions on Signal Processing, 2010, 58, 5129-5141.	3.2	278
10	An Efficient Implementation of the Generalized Labeled Multi-Bernoulli Filter. IEEE Transactions on Signal Processing, 2017, 65, 1975-1987.	3.2	276
11	A Tutorial on Bernoulli Filters: Theory, Implementation and Applications. IEEE Transactions on Signal Processing, 2013, 61, 3406-3430.	3.2	248
12	Adaptive Target Birth Intensity for PHD and CPHD Filters. IEEE Transactions on Aerospace and Electronic Systems, 2012, 48, 1656-1668.	2.6	234
13	A Random-Finite-Set Approach to Bayesian SLAM. IEEE Transactions on Robotics, 2011, 27, 268-282.	7.3	230
14	A Metric for Performance Evaluation of Multi-Target Tracking Algorithms. IEEE Transactions on Signal Processing, 2011, 59, 3452-3457.	3.2	225
15	Data Association and Track Management for the Gaussian Mixture Probability Hypothesis Density Filter. IEEE Transactions on Aerospace and Electronic Systems, 2009, 45, 1003-1016.	2.6	200
16	CPHD Filtering With Unknown Clutter Rate and Detection Profile. IEEE Transactions on Signal Processing, 2011, 59, 3497-3513.	3.2	171
17	Multiple Extended Target Tracking With Labeled Random Finite Sets. IEEE Transactions on Signal Processing, 2016, 64, 1638-1653.	3.2	166
18	Tracking an unknown time-varying number of speakers using TDOA measurements: a random finite set approach. IEEE Transactions on Signal Processing, 2006, 54, 3291-3304.	3.2	160

#	Article	IF	Citations
19	A Gaussian Mixture PHD Filter for Jump Markov System Models. IEEE Transactions on Aerospace and Electronic Systems, 2009, 45, 919-936.	2.6	155
20	Bayesian Filtering With Random Finite Set Observations. IEEE Transactions on Signal Processing, 2008, 56, 1313-1326.	3.2	144
21	Generalized Labeled Multi-Bernoulli Approximation of Multi-Object Densities. IEEE Transactions on Signal Processing, 2015, 63, 5487-5497.	3.2	136
22	Visual tracking of numerous targets via multi-Bernoulli filtering of image data. Pattern Recognition, 2012, 45, 3625-3635.	5.1	135
23	Sequential monte carlo implementation of the phd filter for multi-target tracking. , 2003, , .		129
24	Novel data association schemes for the probability hypothesis density filter. IEEE Transactions on Aerospace and Electronic Systems, 2007, 43, 556-570.	2.6	129
25	Visual Tracking in Background Subtracted Image Sequences via Multi-Bernoulli Filtering. IEEE Transactions on Signal Processing, 2013, 61, 392-397.	3.2	117
26	Sensor control for multi-object state-space estimation using random finite sets. Automatica, 2010, 46, 1812-1818.	3.0	109
27	A Note on the Reward Function for PHD Filters with Sensor Control. IEEE Transactions on Aerospace and Electronic Systems, 2011, 47, 1521-1529.	2.6	109
28	Robust Multi-Bernoulli Filtering. IEEE Journal on Selected Topics in Signal Processing, 2013, 7, 399-409.	7.3	108
29	Bayesian Multi-Target Tracking With Merged Measurements Using Labelled Random Finite Sets. IEEE Transactions on Signal Processing, 2015, 63, 1433-1447.	3.2	98
30	Convergence Analysis of the Gaussian Mixture PHD Filter. IEEE Transactions on Signal Processing, 2007, 55, 1204-1212.	3.2	96
31	Robust Fusion for Multisensor Multiobject Tracking. IEEE Signal Processing Letters, 2018, 25, 640-644.	2.1	95
32	Multi-Sensor Multi-Object Tracking With the Generalized Labeled Multi-Bernoulli Filter. IEEE Transactions on Signal Processing, 2019, 67, 5952-5967.	3.2	91
33	The Cauchyâ€"Schwarz Divergence for Poisson Point Processes. IEEE Transactions on Information Theory, 2015, 61, 4475-4485.	1.5	90
34	Blind ML detection of orthogonal space-time block codes: efficient high-performance implementations. IEEE Transactions on Signal Processing, 2006, 54, 738-751.	3.2	88
35	Improved SMC implementation of the PHD filter. , 2010, , .		86
36	A Solution for Large-Scale Multi-Object Tracking. IEEE Transactions on Signal Processing, 2020, 68, 2754-2769.	3.2	85

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37	The GM-PHD Filter Multiple Target Tracker. , 2006, , .		82
38	Bernoulli Forward-Backward Smoothing for Joint Target Detection and Tracking. IEEE Transactions on Signal Processing, 2011, 59, 4473-4477.	3.2	77
39	A Multi-Scan Labeled Random Finite Set Model for Multi-Object State Estimation. IEEE Transactions on Signal Processing, 2019, 67, 4948-4963.	3.2	77
40	Void Probabilities and Cauchyâ€"Schwarz Divergence for Generalized Labeled Multi-Bernoulli Models. IEEE Transactions on Signal Processing, 2017, 65, 5047-5061.	3.2	73
41	Bayesian Multi-Object Filtering With Amplitude Feature Likelihood for Unknown Object SNR. IEEE Transactions on Signal Processing, 2010, 58, 26-37.	3.2	68
42	Closed-Form Solutions to Forwardâ€"Backward Smoothing. IEEE Transactions on Signal Processing, 2012, 60, 2-17.	3.2	64
43	SLAM Gets a PHD: New Concepts in Map Estimation. IEEE Robotics and Automation Magazine, 2014, 21, 26-37.	2.2	59
44	Multiple Object Tracking in Unknown Backgrounds With Labeled Random Finite Sets. IEEE Transactions on Signal Processing, 2018, 66, 3040-3055.	3.2	58
45	Multi-Target Tracking With Time-Varying Clutter Rate and Detection Profile: Application to Time-Lapse Cell Microscopy Sequences. IEEE Transactions on Medical Imaging, 2015, 34, 1336-1348.	5.4	56
46	Online UAV Path Planning for Joint Detection and Tracking of Multiple Radio-Tagged Objects. IEEE Transactions on Signal Processing, 2019, 67, 5365-5379.	3.2	51
47	Random Finite Sets for Robot Mapping and SLAM. Springer Tracts in Advanced Robotics, 2011, , .	0.3	46
48	Convergence of the SMC Implementation of the PHD Filte. Methodology and Computing in Applied Probability, 2006, 8, 265-291.	0.7	45
49	Filters for Spatial Point Processes. SIAM Journal on Control and Optimization, 2009, 48, 2275-2295.	1.1	45
50	A Generalized Labeled Multi-Bernoulli Filter With Object Spawning. IEEE Transactions on Signal Processing, 2018, 66, 6177-6189.	3.2	44
51	A labeled random finite set online multi-object tracker for video data. Pattern Recognition, 2019, 90, 377-389.	5.1	44
52	A Partially Uniform Target Birth Model for Gaussian Mixture PHD/CPHD Filtering. IEEE Transactions on Aerospace and Electronic Systems, 2013, 49, 2835-2844.	2.6	42
53	Simulation-based optimal sensor scheduling with application to observer trajectory planning. Automatica, 2007, 43, 817-830.	3.0	40
54	<title>Probability hypothesis density filter versus multiple hypothesis tracking</title>. , 2004, 5429, 284.		39

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55	Forward-Backward Probability Hypothesis Density Smoothing. IEEE Transactions on Aerospace and Electronic Systems, 2012, 48, 707-728.	2.6	39
56	A Particle Marginal Metropolis-Hastings Multi-Target Tracker. IEEE Transactions on Signal Processing, 2014, 62, 3953-3964.	3.2	36
57	Gaussian Particle Implementations of Probability Hypothesis Density Filters. , 2007, , .		33
58	OSPA$^{(2)}$: Using the OSPA metric to evaluate multi-target tracking performance. , 2017, , .		33
59	A random finite set conjugate prior and application to multi-target tracking. , 2011, , .		32
60	Performance evaluation of multi-target tracking using the OSPA metric. , 2010, , .		31
61	A Bayesian Filter for Multi-View 3D Multi-Object Tracking With Occlusion Handling. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2022, 44, 2246-2263.	9.7	31
62	Derivation of the PHD and CPHD Filters Based on Direct Kullbackâ€"Leibler Divergence Minimization. IEEE Transactions on Signal Processing, 2015, 63, 5812-5820.	3.2	30
63	The Cardinalized Probability Hypothesis Density Filter for Linear Gaussian Multi-Target Models. , 2006, , .		29
64	A random set formulation for Bayesian SLAM. , 2008, , .		29
65	GM-PHD filter multitarget tracking in sonar images. , 2006, , .		26
66	Multitarget Filtering With Unknown Clutter Density Using a Bootstrap GMCPHD Filter. IEEE Signal Processing Letters, 2013, 20, 323-326.	2.1	26
67	Bayesian approaches to track existence - IPDA and random sets. , 0, , .		24
68	A Gaussian Mixture PHD Filter for Nonlinear Jump Markov Models. , 2006, , .		24
69	Nonlinear Bayesian Filtering Using the Unscented Linear Fractional Transformation Model. IEEE Transactions on Signal Processing, 2010, 58, 477-489.	3.2	24
70	Introduction to the issue on multitarget tracking. IEEE Journal on Selected Topics in Signal Processing, 2013, 7, 373-375.	7.3	24
71	Low-Dimensional SDP Formulation for Large Antenna Array Synthesis. IEEE Transactions on Antennas and Propagation, 2007, 55, 1716-1725.	3.1	23
72	Collaborative Multi-vehicle SLAM with moving object tracking. , 2013, , .		23

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73	Error Bounds for Joint Detection and Estimation of a Single Object With Random Finite Set Observation. IEEE Transactions on Signal Processing, 2010, 58, 1493-1506.	3.2	22
74	Model-based learning for point pattern data. Pattern Recognition, 2018, 84, 136-151.	5.1	22
75	Tracking Cells and Their Lineages Via Labeled Random Finite Sets. IEEE Transactions on Signal Processing, 2021, 69, 5611-5626.	3.2	22
76	Envelope constrained filter with linear interpolator. IEEE Transactions on Signal Processing, 1997, 45, 1405-1414.	3.2	21
77	Rao-Blackwellised PHD SLAM. , 2010, , .		21
78	Bayesian integration of audio and visual information for multi-target tracking using a CB-member filter. , 2011, , .		21
79	Distributed Multi-Object Tracking Under Limited Field of View Sensors. IEEE Transactions on Signal Processing, 2021, 69, 5329-5344.	3.2	21
80	Multi-object filtering from image sequence without detection. , 2010, , .		19
81	Random finite sets and sequential Monte Carlo methods in multi-target tracking. , 0, , .		13
82	Efficient Large-Scale Filter/Filterbank Design via LMI Characterization of Trigonometric Curves. IEEE Transactions on Signal Processing, 2007, 55, 4393-4404.	3.2	13
83	Multi-target Track-Before-Detect using labeled random finite set. , 2013, , .		13
84	An implementation of the multi-sensor generalized labeled multi-Bernoulli filter via Gibbs sampling. , 2017, , .		13
85	Filter Design With Time Domain Mask Constraints: Theory and Applications. Applied Optimization, 2001, , .	0.4	13
86	The Cauchy-Schwarz divergence for poisson point processes. , 2014, , .		12
87	Multi-Scan Generalized Labeled Multi-Bernoulli Filter. , 2018, , .		12
88	Jointly Optimal Precoding/Postcoding for Colored MIMO Systems. , 0, , .		11
89	Gaussian mixture implementations of probability hypothesis density filters for non-linear dynamical models. , 2008, , .		10
90	The forward-backward Probability Hypothesis Density smoother. , 2010, , .		10

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91	A generalized labeled multi-Bernoulli tracker for time lapse cell migration. , 2017, , .		10
92	Multi-Objective Multi-Agent Planning for Jointly Discovering and Tracking Mobile Objects. Proceedings of the AAAI Conference on Artificial Intelligence, 2020, 34, 7227-7235.	3.6	10
93	Performance of PHD Based Multi-Target Filters. , 2006, , .		9
94	Performance Evaluation for Large-Scale Multi-Target Tracking Algorithms. , 2018, , .		9
95	A Multiple Model Probability Hypothesis Density Tracker for Time-Lapse Cell Microscopy Sequences. Lecture Notes in Computer Science, 2013, 23, 110-122.	1.0	9
96	Tracking multiple speakers using random sets. , 0, , .		8
97	Symmetric Orthogonal Complex-Valued Filter Bank Design by Semidefinite Programming. IEEE Transactions on Signal Processing, 2007, 55, 4405-4414.	3.2	8
98	Extending Bayesian RFS SLAM to multi-vehicle SLAM. , 2012, , .		8
99	Simulation-Based Optimal Sensor Scheduling with Application to Observer Trajectory Planning. , 0, , .		7
100	Continuous-time envelope constrained filter design with input uncertainty. IEEE Transactions on Circuits and Systems Part 1: Regular Papers, 2000, 47, 1445-1454.	0.1	6
101	Stochastic approximation for optimal observer trajectory planning. , 0, , .		6
102	Convolution Kernels based Sequential Monte Carlo Approximation of the Probability Hypothesis Density (PHD) Filter. , 2007, , .		6
103	Circumventing the Feature Association Problem in SLAM. IEEE Intelligent Transportation Systems Magazine, 2013, 5, 40-58.	2.6	6
104	Data fusion in 3D vision using a RGB-D data via switching observation model and its application to people tracking. , 2013, , .		6
105	Model-based classification and novelty detection for point pattern data. , 2016, , .		6
106	Iterative algorithms for envelope constrained recursive filter design via Laguerre functions. IEEE Transactions on Circuits and Systems Part 1: Regular Papers, 1999, 46, 1342-1348.	0.1	5
107	Generalized Labeled Multi-Bernoulli Space-Object Tracking with Joint Prediction and Update. , 2016, , .		5
108	Localizing an Unknown Time-varying Number of Speakers: A Bayesian Random Finite Set Approach. , 0, , .		4

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109	The Optimal Observability of Partially Observable Markov Decision Processes: Discrete State Space. IEEE Transactions on Automatic Control, 2010, 55, 2793-2798.	3.6	4
110	Sequential Monte Carlo Methods for Static Parameter Estimation in Random Set Models. , 0, , .		3
111	Multi-object particle filter revisited. , 2016, , .		3
112	Clustering for point pattern data. , 2016, , .		3
113	A Bayesian Approach to Target Tracking with Finite-Set-Valued Observations. , 2007, , .		2
114	Why Random Finite Sets?. Springer Tracts in Advanced Robotics, 2011, , 11-25.	0.3	2
115	Advances in Probabilistic Modeling: Applications of Stochastic Geometry [From the Guest Editors]. IEEE Robotics and Automation Magazine, 2014, 21, 21-24.	2.2	2
116	Towards large scale multi-target tracking. Proceedings of SPIE, 2014, , .	0.8	2
117	Audio-Visual Based Online Multi-Source Separation. IEEE/ACM Transactions on Audio Speech and Language Processing, 2022, 30, 1219-1234.	4.0	2
118	Reply to "Comments on 'Joint Detection and Estimation of Multiple Objects from Image Observations'". IEEE Transactions on Signal Processing, 2012, 60, 1540-1541.	3.2	1
119	Derivation of the PHD filter based on direct Kullback-Leibler divergence minimisation. , 2015, , .		1
120	A labeled random finite set spawning model. , 2017, , .		1
121	Mobile Robotics in a Random Finite Set Framework. Lecture Notes in Computer Science, 2011, , 519-528.	1.0	1
122	Adaptive envelope-constrained filtering. , 0, , .		0
123	Particle Filtering for Multi-Target Tracking Using Jump Markov Systems. , 0, , .		0
124	Analog envelop constrained filter with input uncertainty. , 0, , .		0
125	An RFS Theoretic for Bayesian Feature-Based Robotic Mapping. Springer Tracts in Advanced Robotics, 2011, , 45-76.	0.3	0
126	An RFS â€˜Brute Forceâ€™ Formulation for Bayesian SLAM. Springer Tracts in Advanced Robotics, 2011, , 79-96.	0.3	0

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127	Extensions with RFSs in SLAM. Springer Tracts in Advanced Robotics, 2011, , 127-136.	0.3	0
128	Random finite set multi-target trackers: stochastic geometry for space situational awareness. Proceedings of SPIE, 2015, , .	0.8	0
129	Forward-Backward Smoothing for Hidden Markov Models of Point Pattern Data. , 2017, , .		0