Syed Ali Jafar

List of Publications by Citations

213 papers	14,414 citations	51 h-index	118 g-index
239 ext. papers	18,339 ext. citations	4 avg, IF	7.32 L-index

#	Paper	IF	Citations
213	Interference Alignment and Degrees of Freedom of the K-User Interference Channel. *IEEE Transactions on Information Theory*, **2008**, 54, 3425-3441	2.8	1896
212	Breaking Spectrum Gridlock With Cognitive Radios: An Information Theoretic Perspective. *Proceedings of the IEEE*, **2009**, 97, 894-914	14.3	1521
211	Capacity limits of MIMO channels. *IEEE Journal on Selected Areas in Communications*, **2003**, 21, 684-702	14.2	1208
210	A Distributed Numerical Approach to Interference Alignment and Applications to Wireless Interference Networks. *IEEE Transactions on Information Theory*, **2011**, 57, 3309-3322	2.8	602
209	On Feasibility of Interference Alignment in MIMO Interference Networks. *IEEE Transactions on Signal Processing*, **2010**, 58, 4771-4782	4.8	504
208	Degrees of Freedom Region of the MIMO X Channel. *IEEE Transactions on Information Theory*, **2008**, 54, 151-170	2.8	480
207	Approaching the Capacity of Wireless Networks through Distributed Interference Alignment **2008**,		381
206	Sum power iterative water-filling for multi-antenna Gaussian broadcast channels. *IEEE Transactions on Information Theory*, **2005**, 51, 1570-1580	2.8	364
205	Degrees of Freedom for the MIMO Interference Channel. *IEEE Transactions on Information Theory*, **2007**, 53, 2637-2642	2.8	321
204	Degrees of Freedom of the K User $M \times N$ MIMO Interference Channel. *IEEE Transactions on Information Theory*, **2010**, 56, 6040-6057	2.8	283
203	. *IEEE Transactions on Wireless Communications*, **2004**, 3, 1165-1175	9.6	260
202	Interference Alignment and the Degrees of Freedom of Wireless X Networks. *IEEE Transactions on Information Theory*, **2009**, 55, 3893-3908	2.8	247
201	COGNITIVE RADIOS FOR DYNAMIC SPECTRUM ACCESS - The Throughput Potential of Cognitive Radio: A Theoretical Perspective **2007**, 45, 73-79		246
200	Interference Alignment A New Look at Signal Dimensions in a Communication Network. *Foundations and Trends in Communications and Information Theory*, **2010**, 7, 1-134	6.1	235
199	The Capacity of Private Information Retrieval. *IEEE Transactions on Information Theory*, **2017**, 63, 4075-4088	2.8	225
198	Aiming Perfectly in the Dark-Blind Interference Alignment Through Staggered Antenna Switching. *IEEE Transactions on Signal Processing*, **2011**, 59, 2734-2744	4.8	168
197	Topological Interference Management Through Index Coding. *IEEE Transactions on Information Theory*, **2014**, 60, 529-568	2.8	156

196	Degrees of Freedom of Wireless Networks With Relays, Feedback, Cooperation, and Full Duplex Operation. *IEEE Transactions on Information Theory*, **2009**, 55, 2334-2344	2.8	144
195	Interference Alignment With Asymmetric Complex Signaling—Settling the Høst-Madsen–Nosratinia Conjecture. *IEEE Transactions on Information Theory*, **2010**, 56, 4552-4565	2.8	142
194	Blind Interference Alignment. *IEEE Journal on Selected Topics in Signal Processing*, **2012**, 6, 216-227	7.5	141
193	The Capacity of Robust Private Information Retrieval With Colluding Databases. *IEEE Transactions on Information Theory*, **2018**, 64, 2361-2370	2.8	134
192	Capacity limits of cognitive radio with distributed and dynamic spectral activity. *IEEE Journal on Selected Areas in Communications*, **2007**, 25, 529-537	14.2	133
191	Rethinking information theory for mobile ad hoc networks **2008**, 46, 94-101		127
190	Aligned Interference Neutralization and the Degrees of Freedom of the 2\$,times ,\$2\$,times ,\$2 Interference Channel. *IEEE Transactions on Information Theory*, **2012**, 58, 4381-4395	2.8	124
189	. *IEEE Transactions on Information Theory*, **2013**, 59, 2974-2987	2.8	117
188	Optimal relay functionality for SNR maximization in memoryless relay networks. *IEEE Journal on Selected Areas in Communications*, **2007**, 25, 390-401	14.2	117
187	On the Optimality of Treating Interference as Noise. *IEEE Transactions on Information Theory*, **2015**, 61, 1753-1767	2.8	115
186	Generalized Degrees of Freedom of the Symmetric Gaussian K User Interference Channel. *IEEE Transactions on Information Theory*, **2010**, 56, 3297-3303	2.8	108
185	Retrospective Interference Alignment Over Interference Networks. *IEEE Journal on Selected Topics in Signal Processing*, **2012**, 6, 228-240	7.5	107
184	On Degrees of Freedom Region of MIMO Networks Without Channel State Information at Transmitters. *IEEE Transactions on Information Theory*, **2012**, 58, 849-857	2.8	100
183	Isotropic fading vector broadcast Channels:The scalar upper bound and loss in degrees of freedom. *IEEE Transactions on Information Theory*, **2005**, 51, 848-857	2.8	99
182	On the Synergistic Benefits of Alternating CSIT for the MISO Broadcast Channel. *IEEE Transactions on Information Theory*, **2013**, 59, 4106-4128	2.8	95
181	Optimal Use of Current and Outdated Channel State Information: Degrees of Freedom of the MISO BC with Mixed CSIT. *IEEE Communications Letters*, **2012**, 16, 1084-1087	3.8	93
180	Aligned Image Sets Under Channel Uncertainty: Settling Conjectures on the Collapse of Degrees of Freedom Under Finite Precision CSIT. *IEEE Transactions on Information Theory*, **2016**, 62, 5603-5618	2.8	90
179	Interference Alignment on the Deterministic Channel and Application to Fully Connected Gaussian Interference Networks. *IEEE Transactions on Information Theory*, **2009**, 55, 269-274	2.8	87

178	Capacity With Causal and Noncausal Side Information: A Unified View. *IEEE Transactions on Information Theory*, **2006**, 52, 5468-5474	2.8	83
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176	Ergodic Interference Alignment. *IEEE Transactions on Information Theory*, **2012**, 58, 6355-6371	2.8	79
175	Index Coding An Interference Alignment Perspective. *IEEE Transactions on Information Theory*, **2014**, 60, 5402-5432	2.8	73
174	Ergodic interference alignment **2009**,		72
173	The Capacity of Symmetric Private Information Retrieval. *IEEE Transactions on Information Theory*, **2019**, 65, 322-329	2.8	70
172	On the capacity of cognitive relay assisted Gaussian interference channel **2008**,		70
171	Private Information Retrieval from MDS Coded Data With Colluding Servers: Settling a Conjecture by Freij-Hollanti et al.. *IEEE Transactions on Information Theory*, **2018**, 64, 1000-1022	2.8	62
170	A layered lattice coding scheme for a class of three user Gaussian interference channels **2008**,		61
169	Optimal Download Cost of Private Information Retrieval for Arbitrary Message Length. *IEEE Transactions on Information Forensics and Security*, **2017**, 12, 2920-2932	8	60
168	The Throughput Potential of Cognitive Radio: A Theoretical Perspective **2006**,		58
167	Adaptive multirate CDMA for uplink throughput maximization. *IEEE Transactions on Wireless Communications*, **2003**, 2, 218-228	9.6	58
166	Capacity of Symmetric K-User Gaussian Very Strong Interference Channels **2008**,		57
165	Blind Interference Alignment for Cellular Networks. *IEEE Transactions on Signal Processing*, **2015**, 63, 41-56	4.8	53
164	Multiple-antenna capacity in correlated Rayleigh fading with channel covariance information. *IEEE Transactions on Wireless Communications*, **2005**, 4, 990-997	9.6	53
163	Parallel Gaussian Interference Channels Are Not Always Separable. *IEEE Transactions on Information Theory*, **2009**, 55, 3983-3990	2.8	52
162	How much spectrum sharing is optimal in cognitive radio networks?. *IEEE Transactions on Wireless Communications*, **2008**, 7, 4010-4018	9.6	50
161	Subspace Alignment Chains and the Degrees of Freedom of the Three-User MIMO Interference Channel. *IEEE Transactions on Information Theory*, **2014**, 60, 2432-2479	2.8	49

160	Interference Alignment and the Generalized Degrees of Freedom of the X Channel. *IEEE Transactions on Information Theory*, **2012**, 58, 5130-5150	2.8	48
159	On the Degrees of Freedom of Finite State Compound Wireless Networks. *IEEE Transactions on Information Theory*, **2011**, 57, 3286-3308	2.8	47
158	Multiround Private Information Retrieval: Capacity and Storage Overhead. *IEEE Transactions on Information Theory*, **2018**, 64, 5743-5754	2.8	45
157	Soft Sensing and Optimal Power Control for Cognitive Radio. *IEEE Transactions on Wireless Communications*, **2010**, 9, 3638-3649	9.6	45
156	Degrees of Freedom of the MIMO Interference Channel With Cooperation and Cognition. *IEEE Transactions on Information Theory*, **2009**, 55, 4211-4220	2.8	45
155	Index coding: An interference alignment perspective **2012**,		45
154	Exploiting Channel Correlations - Simple Interference Alignment Schemes with No CSIT **2010**,		40
153	Cross Subspace Alignment and the Asymptotic Capacity of X -Secure T -Private Information Retrieval. *IEEE Transactions on Information Theory*, **2019**, 65, 5783-5798	2.8	39
152	The Capacity of Symmetric Private Information Retrieval **2016**,		38
151	Soft Sensing and Optimal Power Control for Cognitive Radio **2007**,		37
150	PhantomNet: Exploring Optimal Multicellular Multiple Antenna Systems. *Eurasip Journal on Advances in Signal Processing*, **2004**, 2004, 1	1.9	37
149	. *IEEE Transactions on Information Theory*, **2011**, 57, 3032-3044	2.8	36
148	Network coding for multiple unicasts: An interference alignment approach **2010**,		36
147	The Optimality of Transmit Beamforming: A Unified View. *IEEE Transactions on Information Theory*, **2007**, 53, 1558-1564	2.8	36
146	. *IEEE Transactions on Wireless Communications*, **2012**, 11, 1456-1467	9.6	34
145	Degrees of freedom of the K user MIMO interference channel **2008**,		34
144	Duality and Rate Optimization for Multiple Access and Broadcast Channels With Amplify-and-Forward Relays. *IEEE Transactions on Information Theory*, **2007**, 53, 3350-3370	2.8	32
143	On the beamforming design for efficient interference alignment. *IEEE Communications Letters*, **2009**, 13, 847-849	3.8	31

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122	Interference alignment on the deterministic channel and application to fully connected AWGN interference networks **2008**,		20
121	Retrospective interference alignment **2011**,		19
120	Cognitive Radio Networks: How Much Spectrum Sharing is Optimal? **2007**,		19
119	Degrees of Freedom of Rank-Deficient MIMO Interference Channels. *IEEE Transactions on Information Theory*, **2015**, 61, 341-365	2.8	18
118	Index Coding Capacity: How Far Can One Go With Only Shannon Inequalities?. *IEEE Transactions on Information Theory*, **2015**, 61, 3041-3055	2.8	18
117	Degrees of freedom of MIMO X networks: Spatial scale invariance, one-sided decomposability and linear feasibility **2012**,		18
116	Subspace alignment chains and the degrees of freedom of the three-user MIMO interference channel **2012**,		18
115	The Asymptotic Capacity of Private Search **2018**,		18
114	Sum Capacity of a Class of Symmetric SIMO Gaussian Interference Channels Within $ {cal O}(1)$. *IEEE Transactions on Information Theory*, **2011**, 57, 1932-1958	2.8	17
113	**2010**,		17
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111	Degrees of Freedom of MIMO X Networks: Spatial Scale Invariance and One-Sided Decomposability. *IEEE Transactions on Information Theory*, **2013**, 59, 8377-8385	2.8	16
110	Degrees of freedom of wireless X networks **2008**,		16
109	The capacity of private information retrieval with colluding databases **2016**,		16
108	On the Optimality of Treating Interference as Noise: Compound Interference Networks. *IEEE Transactions on Information Theory*, **2016**, 62, 4630-4653	2.8	15
107	Cognitive Blind Interference Alignment for Macro-Femto Networks. *IEEE Transactions on Signal Processing*, **2017**, 65, 5121-5136	4.8	15

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88	The Capacity of Private Information Retrieval with Disjoint Colluding Sets **2017**,		11
87	Minimum Repair Bandwidth for Exact Regeneration in Distributed Storage **2010**,		11
86	Interference alignment and the generalized degrees of freedom of the X channel **2009**,		11
85	Secure GDoF of K-User Gaussian Interference Channels: When Secrecy Incurs No Penalty. *IEEE Communications Letters*, **2015**, 19, 1287-1290	3.8	10
84	On the Two-User MISO Broadcast Channel With Alternating CSIT: A Topological Perspective. *IEEE Transactions on Information Theory*, **2015**, 61, 4345-4366	2.8	10
83	The Asymptotic Capacity of Private Search. *IEEE Transactions on Information Theory*, **2020**, 66, 4709-4721	2.8	10
82	Toward an Extremal Network Theory Robust GDoF Gain of Transmitter Cooperation Over TIN. *IEEE Transactions on Information Theory*, **2020**, 66, 3827-3845	2.8	9
81	Network Coherence Time Matters Aligned Image Sets and the Degrees of Freedom of Interference Networks With Finite Precision CSIT and Perfect CSIR. *IEEE Transactions on Information Theory*, **2018**, 64, 7780-7791	2.8	9
80	On the vector broadcast channel with alternating CSIT: A topological perspective **2014**,		9
79	Optimal Use of Antennas in Interference Networks: A Tradeoff between Rate, Diversity and Interference Alignment **2009**,		9
78	Optimal Distributed Beamforming in Relay Networks with Common Interference **2007**,		9
77	On the Symmetric 2-User Deterministic Interference Channel with Confidential Messages **2015**,		8
76	**2012**,		8
75	Interference alignment at finite SNR: General message sets **2009**,		8
74	Degrees of Freedom Region of the (M, N)(N) MIMO Broadcast Channel With Partial CSIT: An Application of Sum-Set Inequalities Based on Aligned Image Sets. *IEEE Transactions on Information Theory*, **2020**, 66, 6256-6279	2.8	8
73	GCSA Codes With Noise Alignment for Secure Coded Multi-Party Batch Matrix Multiplication. *IEEE Journal on Selected Areas in Information Theory*, **2021**, 2, 306-316	2.5	8
72	K-User Symmetric $M \times N$ MIMO Interference Channel Under Finite Precision CSIT: A GDoF Perspective. *IEEE Transactions on Information Theory*, **2019**, 65, 1126-1136	2.8	7
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69	Sum-set inequalities from aligned image sets: Instruments for robust GDoF bounds **2017**,		7
68	Settling conjectures on the collapse of degrees of freedom under finite precision CSIT **2014**,		7
67	Interference, cooperation and connectivity A degrees of freedom perspective **2011**,		7
66	Interference alignment with asymmetric complex signaling **2009**,		7
65	Can feedback, cooperation, relays and full duplex operation increase the degrees of freedom of wireless networks? **2008**,		7
64	Rank Matching for Multihop Multiflow. *IEEE Transactions on Information Theory*, **2015**, 61, 4751-4764	2.8	6
63	Power Control by GDoF Duality of Treating Interference as Noise. *IEEE Communications Letters*, **2018**, 22, 244-247	3.8	6
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61	Sum-capacity and the unique separability of the parallel Gaussian MAC-Z-BC network **2010**,		6
60	Degrees of freedom of a class of non-layered two unicast wireless networks **2011**,		6
59	Degrees of Freedom of the MIMO X Channel **2007**,		6
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57	Sum-Set Inequalities From Aligned Image Sets: Instruments for Robust GDoF Bounds. *IEEE Transactions on Information Theory*, **2020**, 66, 6458-6487	2.8	6
56	Towards an Extremal Network Theory Robust GDoF Gain of Transmitter Cooperation over TIN **2019**,		6
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54	Aligned Image Sets and the Generalized Degrees of Freedom of Symmetric MIMO Interference Channel With Partial CSIT. *IEEE Transactions on Information Theory*, **2019**, 65, 406-417	2.8	5
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51	On asymptotic interference alignment: Plenary talk **2010**,		5
50	Approximate capacity of a class of multi-source Gaussian relay networks **2010**,		5
49	Optimizing Soft Information in Relay Networks **2006**,		5
48	Sum-GDoF of 2-User Interference Channel With Limited Cooperation Under Finite Precision CSIT. *IEEE Transactions on Information Theory*, **2020**, 66, 6999-7021	2.8	5
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46	On the optimality of treating interference as noise: General message sets **2014**,		4
45	Aiming Perfectly in the Dark - Blind Interference Alignment through Staggered Antenna Switching **2010**,		4
44	Degrees of Freedom for the 4 User SIMO Interference Channel **2008**,		4
43	Duality and stability regions of multi-rate broadcast and multiple access networks **2008**,		4
42	Modulation and Detection for Simple Receivers in Rapidly Time-Varying Channels. *IEEE Transactions on Communications*, **2007**, 55, 529-539	6.9	4
41	On the capacity of the vector MAC with feedback. *IEEE Transactions on Information Theory*, **2006**, 52, 3259-3264	2.8	4
40	DoF region of the MIMO interference channel with partial CSIT **2017**,		3
39	Aligned interference neutralization and the degrees of freedom of the 2 ⊠ 2 ⊠ 2 interference channel **2011**,		3
38	Private Retrieval, Computing and Learning: Recent Progress and Future Challenges. *IEEE Journal on Selected Areas in Communications*, **2022**, 1-1	14.2	3
37	Double Blind T-Private Information Retrieval. *IEEE Journal on Selected Areas in Information Theory*, **2021**, 2, 428-440	2.5	3
36	Exploring Aligned-Images Bounds: Robust Secure GDoF of 3-to-1 Interference Channel **2021**,		3
35	The Capacity of Private Computation **2018**,		3

34	Genie Chains: Exploring Outer Bounds on the Degrees of Freedom of MIMO Interference Networks. *IEEE Transactions on Information Theory*, **2016**, 62, 5573-5602	2.8	2
33	On the optimality of treating interference as noise for parallel deterministic interference networks **2014**,		2
32	On the Symmetric 2-User Deterministic Interference Channel with Confidential Messages **2014**,		2
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30	Transmitter Cooperation under Finite Precision CSIT: A GDoF Perspective **2015**,		2
29	Rank-matching for multihop multiflow **2014**,		2
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27	Two-user MISO broadcast channel: Synergistic benefits of alternating CSIT **2013**,		2
26	Spreading-Hopping Tradeoff in Wideband Ad-hoc Communications **2006**,		2
25	X-Secure T-Private Federated Submodel Learning **2021**,		2
24	On the optimality of zero-forcing and treating interference as noise for K-user MIMO interference channels **2016**,		2
23	GDoF of Interference Channel with Limited Cooperation under Finite Precision CSIT **2019**,		2
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21	Sum-GDoF of Symmetric Multi-hop Interference Channel under Finite Precision CSIT using Aligned-Images Sum-set Inequalities. *IEEE Transactions on Information Theory*, **2022**, 1-1	2.8	2
20	Generalized DoF of the symmetric K-user interference channel under finite precision CSIT **2016**,		1
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17	Tensor product based subspace interference alignment for network coding applications **2011**,		1

16	Aligned interference neutralization and the degrees of freedom of the 2⊠⊠ interference channel with interfering relays **2011**,		1
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14	Cognitive radio: A path in the evolution of public wireless networks. *Journal of Communications and Networks*, **2009**, 11, 99-103	4.1	1
13	Generalized degrees of freedom of the (noisy) X channel **2008**,		1
12	Degrees of freedom of the MIMO interference channel with cooperation and cognition **2008**,		1
11	Robust Optimality of Secure TIN. *IEEE Transactions on Wireless Communications*, **2021**, 1-1	9.6	1
10	CSIT Thresholds for Collapse of Degrees of Freedom in Wireless Networks **2018**,		1
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8	Distributed Interference Alignment for K-user Interference Channels via Deep Learning **2021**,		1
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6	X-Secure T-Private Federated Submodel Learning with Elastic Dropout Resilience. *IEEE Transactions on Information Theory*, **2022**, 1-1	2.8	0
5	Correction to "On the Optimality of Beamforming with Quantized Feedback" [Dec 07 2288-2302]. *IEEE Transactions on Communications*, **2014**, 62, 1151-1151	6.9	
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