

# Upamanyu Madhow

## List of Publications by Year in descending order

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96  
papers

2,865  
citations

471509

17  
h-index

395702

33  
g-index

96  
all docs

96  
docs citations

96  
times ranked

2208  
citing authors

#	ARTICLE	IF	CITATIONS
1	Interference Analysis for Highly Directional 60-GHz Mesh Networks: The Case for Rethinking Medium Access Control. IEEE/ACM Transactions on Networking, 2011, 19, 1513-1527.	3.8	369
2	On the limits of communication with low-precision analog-to-digital conversion at the receiver. IEEE Transactions on Communications, 2009, 57, 3629-3639.	7.8	281
3	Indoor Millimeter Wave MIMO: Feasibility and Performance. IEEE Transactions on Wireless Communications, 2011, 10, 4150-4160.	9.2	224
4	Distributed Transmit Beamforming Using Feedback Control. IEEE Transactions on Information Theory, 2010, 56, 411-426.	2.4	205
5	Compressive Channel Estimation and Tracking for Large Arrays in mm-Wave Picocells. IEEE Journal on Selected Topics in Signal Processing, 2016, 10, 514-527.	10.8	175
6	Newtonized Orthogonal Matching Pursuit: Frequency Estimation Over the Continuum. IEEE Transactions on Signal Processing, 2016, 64, 5066-5081.	5.3	123
7	Channel Modeling and MIMO Capacity for Outdoor Millimeter Wave Links. , 2010, , .		97
8	A Scalable Architecture for Distributed Transmit Beamforming with Commodity Radios: Design and Proof of Concept. IEEE Transactions on Wireless Communications, 2013, 12, 1418-1428.	9.2	81
9	'Print and Scan' Resilient Data Hiding in Images. IEEE Transactions on Information Forensics and Security, 2006, 1, 464-478.	6.9	77
10	Noncoherent mmWave Path Tracking. , 2017, , .		73
11	Compressive adaptation of large steerable arrays. , 2012, , .		64
12	Compressive tracking with 1000-element arrays: A framework for multi-Gbps mm wave cellular downlinks. , 2012, , .		58
13	Multi-Gigabit communication: the ADC bottleneck<sup>1</sup>. , 2009, , .		49
14	Distributed beamforming with software-defined radios: Frequency synchronization and digital feedback. , 2012, , .		44
15	Title is missing!. Journal of Signal Processing Systems, 2002, 30, 273-291.	1.0	38
16	Compressive Parameter Estimation in AWGN. IEEE Transactions on Signal Processing, 2014, 62, 2012-2027.	5.3	38
17	Millimeter-Wave Spatial Multiplexing in an Indoor Environment. , 2009, , .		35
18	Matrix Embedding With Pseudorandom Coefficient Selection and Error Correction for Robust and Secure Steganography. IEEE Transactions on Information Forensics and Security, 2010, 5, 225-239.	6.9	31

#	ARTICLE	IF	CITATIONS
19	Attaining fundamental bounds on timing synchronization. , 2012, , .		30
20	Receiver-coordinated distributed transmit nullforming with channel state uncertainty. , 2012, , .		30
21	Robust Wireless Fingerprinting via Complex-Valued Neural Networks. , 2019, , .		30
22	Demonstrating distributed transmit beamforming with software-defined radios. , 2012, , .		29
23	RF source-seeking by a micro aerial vehicle using rotation-based angle of arrival estimates. , 2013, , .		29
24	Quadrotor control for RF source localization and tracking. , 2014, , .		29
25	A feedback-based distributed phased array technique and its application to 60-GHz wireless sensor network. , 2008, , .		26
26	A Reaction-Diffusion Model for Epidemic Routing in Sparsely Connected MANETs. , 2010, , .		26
27	Distributed Reception with Hard Decision Exchanges. IEEE Transactions on Wireless Communications, 2014, 13, 3406-3418.	9.2	25
28	Joint Mismatch and Channel Compensation for High-Speed OFDM Receivers with Time-Interleaved ADCs. IEEE Transactions on Communications, 2010, 58, 2391-2401.	7.8	24
29	Bayesian localization and mapping using GNSS SNR measurements. , 2014, , .		23
30	Beamspace Local LMMSE: An Efficient Digital Backend for mmWave Massive MIMO. , 2019, , .		22
31	Joint Routing and Resource Allocation for Millimeter Wave Picocellular Backhaul. IEEE Transactions on Wireless Communications, 2020, 19, 783-794.	9.2	22
32	Localizing Multiple Events Using Times of Arrival: a Parallelized, Hierarchical Approach to the Association Problem. IEEE Transactions on Signal Processing, 2012, 60, 5464-5477.	5.3	21
33	A Scalable Architecture for Distributed Receive Beamforming: Analysis and Experimental Demonstration. IEEE Transactions on Wireless Communications, 2016, 15, 2039-2053.	9.2	20
34	Generalized Blind Mismatch Correction for Two-Channel Time-Interleaved A-to-D Converters. , 2007, , .		19
35	A 60GHz line-of-sight 2x2 MIMO link operating at 1.2Gbps. , 2008, , .		19
36	Nonuniform Array Design for Robust Millimeter-Wave MIMO Links. , 2009, , .		19

#	ARTICLE	IF	CITATIONS
37	Analog multitone with interference suppression: Relieving the ADC bottleneck for wideband 60 GHz systems. , 2012, , .		19
38	Towards All-digital mmWave Massive MIMO: Designing around Nonlinearities. , 2018, , .		18
39	Near-Coherent QPSK Performance With Coarse Phase Quantization: A Feedback-Based Architecture for Joint Phase/Frequency Synchronization and Demodulation. IEEE Transactions on Signal Processing, 2016, 64, 4432-4443.	5.3	17
40	Phase-Quantized Block Noncoherent Communication. IEEE Transactions on Communications, 2013, 61, 2828-2839.	7.8	15
41	Interference Analysis for mm-Wave Picocells. , 2015, , .		15
42	A Scalable Feedback Mechanism for Distributed Nullforming With Phase-Only Adaptation. IEEE Transactions on Signal and Information Processing Over Networks, 2015, 1, 58-70.	2.8	14
43	Distributed Receive Beamforming: A Scalable Architecture and Its Proof of Concept. , 2013, , .		13
44	On the capacity of picocellular networks. , 2013, , .		13
45	Coded noncoherent communication with amplitude/phase modulation: from shannon theory to practical architectures. IEEE Transactions on Communications, 2008, 56, 2040-2049.	7.8	12
46	Belief propagation based localization and mapping using sparsely sampled GNSS SNR measurements. , 2014, , .		11
47	A Low Computation Adaptive Blind Mismatch Correction for Time-Interleaved ADCs. Midwest Symposium on Circuits and Systems, 2006, , .	1.0	10
48	MultiGigabit millimeter wave communication: System concepts and challenges. , 2008, , .		10
49	Limited feedback in massive MIMO systems: Exploiting channel correlations via noncoherent trellis-coded quantization. , 2013, , .		10
50	Noncoherent compressive channel estimation for mm-wave massive MIMO. , 2018, , .		10
51	Design of Large Effective Apertures for Millimeter Wave Systems Using a Sparse Array of Subarrays. IEEE Transactions on Signal Processing, 2019, 67, 6483-6497.	5.3	10
52	On Localization Performance in Imaging Sensor Nets. IEEE Transactions on Signal Processing, 2007, 55, 5044-5057.	5.3	9
53	Joint Channel and Mismatch Correction for OFDM Reception with Time-interleaved ADCs: Towards Mostly Digital MultiGigabit Transceiver Architectures. , 2008, , .		9
54	A 2.4 Gb/s millimeter-wave link using adaptive spatial multiplexing. , 2010, , .		9

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55	Shaping Throughput Profiles in Multihop Wireless Networks: A Resource-Biasing Approach. IEEE Transactions on Mobile Computing, 2012, 11, 367-376.	5.8	9
56	Optimal Precoder Design for Distributed Transmit Beamforming Over Frequency-Selective Channels. IEEE Transactions on Wireless Communications, 2018, 17, 7759-7773.	9.2	9
57	Phase Noise in Modular Millimeter Wave Massive MIMO. IEEE Transactions on Wireless Communications, 2021, 20, 6522-6535.	9.2	9
58	Networking at 60 GHz: The emergence of multiGigabit wireless. , 2010, , .		8
59	Multiple event localization in a sparse acoustic sensor network using UAVs as data mules. , 2012, , .		8
60	Distributed MIMO Multicast With Protected Receivers: A Scalable Algorithm for Joint Beamforming and Nullforming. IEEE Transactions on Wireless Communications, 2017, 16, 512-525.	9.2	8
61	Sidestepping the Rayleigh limit for LoS spatial multiplexing: A distributed architecture for long-range wireless fiber. , 2013, , .		7
62	Probabilistic 3D mapping based on GNSS SNR measurements. , 2014, , .		7
63	Interference-aware routing and spectrum allocation for millimeter wave backhaul in urban picocells. , 2015, , .		7
64	Slicer Architectures for Analog-to-Information Conversion in Channel Equalizers. IEEE Transactions on Communications, 2017, 65, 1234-1246.	7.8	6
65	A Design Framework for All-Digital mmWave Massive MIMO With per-Antenna Nonlinearities. IEEE Transactions on Wireless Communications, 2021, 20, 5689-5701.	9.2	6
66	Interference Management and Capacity Analysis for mm-Wave Picocells in Urban Canyons. IEEE Journal on Selected Areas in Communications, 2019, 37, 2715-2726.	14.0	5
67	Broadband millimeter wave networks: Architectures and applications. , 2008, , .		4
68	Distributed detection with a minimalistic signal model: A framework for exploiting correlated sensing. , 2008, , .		4
69	Signal processing for multiGigabit communication. , 2009, , .		3
70	Frequency tracking with intermittent wrapped phase measurement using the Rao-Blackwellized particle filter. , 2014, , .		3
71	Capacity maximization for distributed broadband beamforming. , 2016, , .		3
72	Short Range 3D MIMO mmWave Channel Reconstruction via Geometry-aided AoA Estimation. , 2019, , .		3

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73	Polarizing Front Ends for Robust Cnns. , 2020, , .		3
74	Collector Receiver Design for Data Collection and Localization in Sensor-driven Networks. , 2007, , .		2
75	Scalable Mismatch Compensation for Time-Interleaved A/D Converters in OFDM Reception. , 2010, , .		2
76	Space-time localization using times of arrival. , 2011, , .		2
77	Noncoherent trellis-coded quantization for massive MIMO limited feedback beamforming. , 2013, , .		2
78	On the Information in Spike Timing: Neural Codes Derived from Polychronous Groups. , 2018, , .		2
79	An Efficient Digital Backend for Wideband Single-Carrier mmWave Massive MIMO. , 2019, , .		2
80	Near-Optimal Quantization for LoS MIMO with QPSK Modulation. , 2019, , .		2
81	All-Digital LoS MIMO With Low-Precision Analog-to-Digital Conversion. IEEE Transactions on Wireless Communications, 2022, 21, 5600-5613.	9.2	2
82	Cross-layer optimization of the reservation channel in a pseudocellular network: mobile-centric fast handoffs via multiuser detection. , 0, , .		1
83	Millimeterwave (60 GHz) Imaging Wireless Sensor Network: Recent Progress. Conference Record of the Asilomar Conference on Signals, Systems and Computers, 2007, , .	0.0	1
84	Noncoherent eigenbeamforming and interference suppression for outdoor OFDM systems. IEEE Transactions on Communications, 2008, 56, 915-924.	7.8	1
85	On the scalability of joint channel and mismatch estimation for time-interleaved analog-to-digital conversion in communication receivers. , 2010, , .		1
86	Wireless communications research: The next two decades. , 2012, , .		1
87	Scalable Nonlinear Multiuser Detection for mmWave Massive MIMO. , 2020, , .		1
88	Spatial Oversampling for Quantized LoS MIMO. , 2021, , .		1
89	Low-Resolution Architectures for Power-Efficient Scaling of mmWave Phased Array Receivers. Journal of Signal Processing Systems, 0, , .	2.1	1
90	X- and K-band Tunable Phase Generation Circuits for Monolithic mm-Wave Phased Arrays. , 2008, , .		0

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91	X- and K-band Tunable Phase Generation Circuits for Monolithic mm-Wave Phased Arrays. , 2008, , .		0
92	Optimization of Correlated Source Coding for Event-Based Monitoring in Sensor Networks. , 2009, , .		0
93	On the theory of multiGigabit transceiver implementations. , 2010, , .		0
94	On the convergence of joint channel and mismatch estimation for time-interleaved data converters. , 2011, , .		0
95	Distributed Base Station: A Concept System for Long-Range Broadband Wireless Access. Electronics (Switzerland), 2021, 10, 2396.	3.1	0
96	Multi-Sensor Spatial Association Using Joint Range-Doppler Features. IEEE Transactions on Signal Processing, 2021, 69, 5756-5769.	5.3	0