CV

Dr. Sudhan Majhi

1. Name and full correspondence address

Dr. Sudhan Majhi, PhD, NTU, Singapore
Associate Professor, ECE, Indian Institute of Science (IISc), Bangalore, India Fellow Sir Visvesvaraya Young Faculty Research
Fellow Institution of Engineers India, IEI
Fellow Institution of Electronics and Telecommunication Engineers (IETE)
Co-founder of Ewarn System Pvt. Ltd

2. Email(s) and contact number(s)

smajhi@iisc.ac.in, sudhanmajhi@gmail.com, Mobile: +919546364843

3. Gender

Male

4. Research interest:

Signal processing for wireless communication Estimation and detection
Integrated sensing and communication Near Field Communication
Semantic communication
Reconfigurable Intelligent surface (RIS) AI/ML for 6G wireless communication

5. Subject Teaching/Taught:

Wireless Communication
Advanced Digital Communication Advanced Digital Signal Processing
Emerging wireless communication ML for Wireless communications
Statistical Signal Processing for Communication
Communication Networking
Information Theory and Coding
Probability and Statistics
Basic Electronics
Lab Linear Algebra Calculus
OrdinaryDifferential Equation
Data Structure and Programming Language (C and C++)

6. Academic Qualification

Sl.No.	Degree	Year	Subject	University/ Institution	% of marks
1.	PhD	(Sub:200	Signal processing for	NTU, Singapore	N/A

		7) 2008	wireless communication		
2.	M.Tech	2004	Computer science and data processing	IIT Kharagpur, India	7.7/10
3.	M.Sc	2001	Applied Mathematics	Vidyasagar University, WB, India	72%
4.	B.Sc	1999	Mathematics	Vidyasagar University, WB, India	62%

7. Details of professional training

Sl. No.	Experience	University/ Board	Subject	Duration
1.	Summer School	A*STAR, Singapore	Machine Learning summer school	05/2011-06/2011
2.	Training on Fundamental course on Labview	National Instrument, Singapore	Basic course on Labview,	08/2010-09/2010
3.	Learning English as a secondary language	University of Michigan, USA	English	05/2008-06/2008
4.	Research Associate	NTU, School of CSE	Implement UDP protocol	09/2007-12/2007

8. Work experience

Sl.No.	Positions Held	Name of the Institute	From	To
1.	Associate Professor	Electrical and Communication Engineering, IISc, Bangalore	08/2021	Present
2.	Associate Professor	Electrical Engineering, IIT Patna	07/2018	08/2021
3.	Visiting Professor	Southwest Jiao Tong University, China	9/2019	10/2019
4.	Visiting Professor	University of Melbourne, Australia	11/2018	11/2018
5.	Visiting Researcher	University of Michigan Dearborn, USA	05/2016	07/2016
6.	Assistant Professor	Jointly with Mathematics and Electrical Engineering, IIT Patna	03/2013	06/2018
7.	Assistant Professor	Department of Mathematics, IIT Patna	03/2013	10/2013
8.	Research Fellow	EEE, NTU, Singapore	06/2010	03/2013
9.	Research Scientist	IEITR, INSA, France	04/200	06/201

			9	0
10.	Postdoctoral Research Fellow	University of Michigan, Dearborn, USA	01/2008	04/2009
11.	Junior research fellow	Department of Mathematics, IIT Kharagpur	06/2003	06/2004

9. Professional Recognition

Sl.No.	Name of Award	Awarding Agency/Institute	Year
1.	Best Editor of IEEE WCL	IEEE WCL	2023
2.	Series Editor, IoT and AI for Wireless Communication	Springer	2023
3.	SERB-STAR Award	SERB, DST, India	2022
4.	SERB-TETRA Award	SERB, DST, India	2022
5.	Editor	IEEE Wireless Communication Letter	2021-Present
6.	Co-founder Ewarn System	Incubation at IIT Patna, NIT Rourkela	
7.	Fellow	IETE	2020
8.	Fellow	Institution of Engineers (India)	2020
9.	MDC Vice-Chairs, Asia Pacific Board	IEEE Communication Society	2020
10.	**Best Poster Award** received by PhD students in research scholar day	IIT Patna	2020
11.	Editor	IEEE Transactions on Vehicular Technology	2018-2023
12.	Senior Editor	IEEE Communications Letters	2019-2023
13.	Associate Editor	CSSP-Springer	2015-2019
14.	**Best M.Tech Thesis award** received by M.Tech research scholar	IIT Patna	2018
15.	**Best Poster Award** received by PhD students in research scholar day	IIT Patna	2018
16.	**Young Faculty Research Fellowship Award**	Media Lab Asia, MeitY, Gov. India	2017
17.	**Best Paper Award** in "Advancing Technology for Humanity". 2016 IEEE students' Technology symposium	IEEE students' Technology symposium	2016
18.	Associate Editor	CSSP, Springer	2016
19.	Received Start-up grant for **Young**	DST, GOI, Gov. India	2015

	Scientists		
20.	Senior Member	IEEE, USA	2015
21.	**Best Award** in the academic category of NI ASEAN Graphical System Design Achievement Awards	National Instrument, Singapore	2012
22.	**Best paper nomination**	IEEE WCNC 07, Hong Kong	2007
23.	Research Scholarship grant	NTU, Singapore	2004-2007
24.	GATE in Mathematics, All India Rank 8th	MHRD, Gov. India	2002
25.	Qualified NET-UGC examination in Mathematics	MHRD, Gov. India	2002
26.	Qualified NET-CSIR Examination in Mathematics	CSIR, Gov. India	2001
27.	Merit Scholarship	S.J. J. T, Delhi	1996-1999
28.	6th Rank in M.Sc, Mathematics	Vidyasagar University, WB, India	2001
29.	5th Rank in B.Sc, Mathematics	Vidyasagar University, WB, India	1999

10. Supervisor

Sl.No	Supervised in	Completed	Ongoing
1.	PhD	17	6
2.	M.Tech Research	0	2
3.	M.Tech	30	5
4.	B.Tech	16	0

11. Project and funding

S.No.	Title	Principal Investigator	Funding Agency	Amount (Lakh)
1.	Young Faculty Research Fellowship	Dr. S. Majhi	Media Lab Asia, MeitY,	37
2.	Efficient Non-Stationary OFDM based Multicarrier Waveform Design for High Data Rate Next Generation Mobile Wireless Communication	Co-PI Dr. S. Majhi	MeitY, Gov. India	64
3.	FPGA testbed for Modulation Classification	Dr. S. Majhi	SERB, DST, Gov. India	21

	of OFDM, MIMO- OFDM.			
4.	Blind STO and CFO Estimation and Implementation over OFDM, and MIMO-SC-FDMA testbed	Dr. S. Majhi	Start-up grant for Young Scientists (YSS) DST	25
5.	Secrecy Capacity analysis for Cognitive radios	Dr. S. Majhi	Media Lab Asia, DeitY, (Manpower)	25
6.	Advanced Wireless Networks: Joint Design of Technology and Business Models course	Dr. S. Majhi	GIAN, MHRD	14
7.	Number Systems for Digital Signal Processing course	Dr. S. Majhi	GIAN, MHRD	8
8.	Developing Signal processing for wireless communication lab, Phase I	Dr. S. Majhi	National Instrument	120
9.	Developing Signal processing for wireless communication lab, Phase I	Dr. S. Majhi	IIT Patna	125
10.	Developing Signal processing for wireless communication lab, Phase II	Dr. S. Majhi	Keysight, Singapore	55
11.	Developing Signal processing for wireless communication lab, Phase II	Dr. S. Majhi	IIT Patna	55
12.	Intelligent Receiver design by using statistical and machine learning approach	Dr. S. Majhi	MeitY	70
13.	Wireless communication lab setup	Dr. S. Majhi	IISc	160
14.	Modulation Classification for linearly modulated signal	Dr. S. Majhi	SERB-TETRA Award, India	30
15.	IRS-Assisted Uplink, Downlink, and Full Duplex Satellite Communication and Its Prototyping	Dr. S. Majhi	SERB-STAR Award , India	30
16.	Joint STO and CFO Estimation for Intelligent Reflecting Surface (IRS)	Dr. S. Majhi	SERB-EEQ, India	21

	Assisted OFDM/OTFS using Deep Learning			
17.	Full duplex communication for Intelligent reflecting surface (IRS) surface using index modulation	Dr. S. Majhi	SERB-CRG, India	25
18.	Study of URLLC for 5G communication	Dr. S. Majhi	Lab to Market Pvt. Ltd.	1
19.	Embient light for VLC communication	Dr. S. Majhi and Dr. V. Radhunathan	Boeing	30
20.	AI/ML for NW	S. Majhi	Tejas Netrowks	4
21.	AI/ML for UE	S. Majhi	SSIR	16
TOTAL				**920**

12. Institute responsibility

Sl. No.	**Positions**	**Year**
1.	Member, Outreach program, EECS, IISc	2022-2023
2.	Convenor, Outreach program, ECE, IISc	2023-Present
3.	Member, UG admission committee, IISc	2023
4.	Chairman, Instructor Selection Committee, IISc	2022
5.	Member, Admission committee of Math and computing, IISc	2022
6.	***Elected Member, BoG, IIT Patna***	***01/2021-07/2021***
7.	Member, Finance committee, IIT Patna	01/2021-07/2021
8.	Chairman JEE (Advanced), IIT Patna	2018-2020
9.	Member of Institute house allotment committee, IIT Patna	2019-2021
10.	Member of Institute Medical Committee, IIT Patna	2019-2021
11.	Vice Chairman JEE (Advanced), IIT Patna	2016-2018
12.	Member of central purchase committee, IIT Patna	2016-2018
13.	Convener/ PIC of Landscaping, IIT Patna	2016-2017
14.	Chairman Departmental Purchase Committee, IIT Patna	2014-2017
15.	Member of Institute Safety Committee, IIT Patna	2017-2019

16.	***HOD, Department of Mathematics, IIT Patna***	***2014-2016***
17.	Member of Senate, IIT Patna	2014-2015
18.	Member of Institute of Academic Policy Committee, IIT Patna	2014-2015
19.	Professor In Charge of Foreign Collaboration, IIT Patna	2013-2015
20.	Professor In Charge of Classroom Development, IIT Patna	2013-2015
21.	Member of Landscaping committee, IIT Patna	2014-2015

13. Publications

Journal Papers After Joining IISc

[1] J. Pradhan, V. K. Kappala, S. Majhi and S. K. Das, "Time-Varying Channel Estimation for ACO-OFDM VLC Over Mobile Environment," in IEEE Transactions on Vehicular Technology, vol. 73, no. 8, pp. 11556-11567, Aug. 2024, doi: 10.1109/TVT.2024.3379428.

[2] S. Singh, S. Kumar, S. Majhi and U. Satija, "Blind CFOs Estimation by Capon Method for Multi-User MIMO-OFDMA Uplink System," in IEEE Signal Processing Letters, vol. 31, pp. 2545-2549, 2024, doi: 10.1109/LSP.2024.3458793.

[3] S. Singh, S. Kumar, S. Majhi, U. Satija and C. Yuen, "Blind Carrier Frequency Offset Estimation Techniques for Next-Generation Multicarrier Communication Systems: Challenges, Comparative Analysis, and Future Prospects," in IEEE Communications Surveys & Tutorials, doi: 10.1109/COMST.2024.3472109.

[4] P. Deshmukh, K. Chaitanya Rayasam, U. Kumar Sahoo, S. Kumar Das and S. Majhi, "Multi-Class Vehicle Detection Using VDnet in Heterogeneous Traffic," in IEEE Transactions on Intelligent Transportation Systems, vol. 25, no. 12, pp. 19415-19429, Dec. 2024, doi: 10.1109/TITS.2024.3476122.

[5] Palash Sarkar, Chunlei Li, Sudhan Majhi, Zilong Liu, "A Further Investigation on Complete Complementary Codes from q-ary Functions" in arXiv:2409.14462 https://doi.org/10.48550/arXiv.2409.14462

[6] P. Sarkar, C. Li, S. Majhi, and Z. Liu, “New Correlation Bound and Construction of Quasi-Complementary Sequence Sets,” ***IEEE Transactions on Information Theory***, vol. 70, no. 3, pp. 2201-2223, March 2024.

[7] R. Kaur, B. Bansal, S. Majhi, S. Jain, C. Huang, and C. Yuen, “A Survey on Reconfigurable Intelligent Surface for Physical Layer Security of Next-Generation Wireless Communications,” ***IEEE Open Journal of Vehicular Technology***, vol. 5, pp. 172-199, 2024.

[8] P. Kumar, and S. Majhi, “UAV-Assisted Network Coded Cooperation by Using Height-Dependency Shaping Parameters in Nakagami-m Faded Channel,” ***IEEE Access***, vol. 12, pp. 11688-11699, 2024.

[9] S. Perveen, S. Majhi, and O. A. Dobre, “RIS-Assisted Full Duplex Communication Using ZS-BF and Signal Alignment Technique***,” IEEE Communications Letters***, vol. 28, no. 2, pp. 407-411, Feb. 2024.

[10] A. Kumar, M. S. Chaudhari, and S. Majhi, “Automatic Modulation Classification for OFDM Systems Using bi-stream and Attention-based CNN-LSTM Model,” ***IEEE Communications Letters***, vol. 28, no. 3, pp. 552-556, Mar. 2024.

[11] S. Bhattacharyya, P. Kumar, S. Darshi, S. Majhi, B. Kumbhani, and A. A. Almohammedi, “Hybrid Relaying Based Cross Layer MAC Protocol Using Variable Beacon for Cooperative Vehicles,” ***IEEE Transactions on Vehicular Technology***, vol. 73, no. 1, pp. 258-267, Jan. 2024.

[12] S. Singh, S. Kumar, S. Majhi, U. Satija, and C. Yuen, “Blind Carrier Frequency Offset Estimation Techniques for Next-Generation Multicarrier Communication Systems: Challenges, Comparative Analysis, and Future Prospects,” ***IEEE Communications Surveys & Tutorials***, pp. 1-1, 2024.

[13] P. Deshmukh, K. C. Rayasam, U. K. Sahoo, S. K. Das, and S. Majhi, "Multi-Class Vehicle Detection Using VDnet in Heterogeneous Traffic," ***IEEE Transactions on Intelligent Transportation Systems***, pp. 1-15, 2024.

[14] J. Pradhan, V. K. Kappala, S. Majhi, and S. K. Das, "Time-Varying Channel Estimation for ACO-OFDM VLC Over Mobile Environment," ***IEEE Transactions on Vehicular Technology***, vol. 73, no. 8, pp. 11556-11567, Aug. 2024.

[15] S. Singh, S. Kumar, S. Majhi, and U. Satija, "Blind CFOs Estimation by Capon Method for Multi-User MIMO-OFDMA Uplink System," ***IEEE Signal Processing Letters***, vol. 31, pp. 2545-2549, 2024.

[16] R. Kumar, S. K. Jha, P. K. Srivastava, and S. Majhi, “Construction of type-II ZCCS for the MC-CDMA system with low PMEPR,” ***Digital Signal Processing***, vol. 151, pp. 104570, ISSN. 1051-2004, 2024.

[17] P. Priyanshu, S. Paul, and S. Majhi, “Construction of all even lengths type-II Z-complementary pair with a large zero-correlation zone,” ***Cryptography and Communications***, pp. 1-11, Jul. 2024. (***Q1 Journal in Mathematics***)

[18] N. Kumar, S. K. Jha, S. Majhi, and S. Paul, “A construction of multiple Z-complementary code sets with inter-set low correlation,” ***Signal Processing***, vol. 219, pp. 109392, ISSN. 0165-1684, 2024.

[19] N. Kumar, P. Sarkar, and S. Majhi, “Construction of spectrally-null-constrained zero-correlation zone sequences with flexible support,” ***Cryptography and Communications***, vol. 16, pp. 1-17, May 2024.

[20] P. Kumar, S. Majhi, and S. Paul, “A direct construction of cross z-complementary sequence sets with large set size,” ***Cryptography and Communications***, vol. 16, pp. 1-11, Feb. 2024.

[21] P. Kumar, S. Bhattacharyya, S. Darshi, S. Majhi, A. A. Almohammedi, and S. Shailendra, "Outage Analysis Using Probabilistic Channel Model for Drone Assisted Multi-User Coded Cooperation System," ***IEEE Transactions on Vehicular Technology,*** vol. 72, no. 8, pp. 10273-10285, Aug. 2023.

[22] N. Kumar, S. Majhi, and S. K. Jha, “A new construction of almost-optimal multiple ZCZ sequence sets for multi-cell QS-CDMA system,” ***Cryptography and Communications***, vol. 16, pp. 1-16, Nov. 2023.

[23] G. Ghosh, S. Majhi, and S. Paul, “A direct construction of optimal 2D-ZCACS with flexible array size and large set size,” ***Cryptography and Communications***, vol. 16, pp. 1-19, Sept. 2023.

[24] N. Kumar, S. Majhi, and A. K. Upadhyay, “A direct construction of complete complementary code with zero correlation zone property for prime-power length,” ***Cryptography and Communications***, vol. 16, pp. 1-24, Oct. 2023.

[25] A. Dutta and S. Majhi, “Restricted Search Space Exploration with Refinement for Symbol Detection in Uplink Massive MIMO,” Accepted at ***IEEE Transactions on Vehicular Technology***, 2023

[26] G. Ghosh, S. Majhi and S. Paul, “Construction of Optimal Binary Z-Complementary Code Sets with New Lengths Using Generalized Boolean Function,” Accepted in ***Cryptography and Communications***, 2023.

[27] A. Kumar, S. Jain and Sudhan Majhi, “Channel Estimator and Symbol Detector for OTFS Systems Impaired by Impulsive Noise,” ***IEEE Communications Letters***, 2023

[28] A. Dutta and Sudhan Majhi, “Low Complexity Detection For QCM-MIMO Using MSRE Aided Proximal Algorithm,” ***IEEE Communications Letters***, 2023.

[29] S Jain, S Majhi, “Sparsity-Constrained Kernel Generalized Maximum Versoria Criterion With Variable Center,” ***IEEE Transactions on Circuits and Systems II***, 2023

[30] A. Kumar, K. K Srinivas, S. Majhi, “Automatic Modulation Classification for Adaptive OFDM Systems Using Convolutional Neural Networks with Residual Learning,” ***IEEE Access***, 2023.

[31] S. Bhattacharyya, P. Kumar, S. Darshi, S. Majhi, B. Kumbhani, A. A. Almohammedi, “Hybrid Relaying based Cross Layer MAC Protocol using Variable Beacon for Cooperative Vehicles, Accepted in ***IEEE Transactions on Vehicular Technology***, 2023.

[32] A. Datta, and S. Majhi, “Restricted Search Space Exploration with Refinement for Symbol Detection in Uplink Massive MIMO,” ***IEEE Transaction on Vehicular Technology***, 2023.

[33] S. Jain, and S. Majhi, "Sparsity-Constrained Kernel Recursive Generalized Maximum Versoria Criterion Algorithm," ***IEEE Signal Processing Letter***, 2023.

[34] S. Thakur, A. Singh, and S. Majhi, “Secrecy Analysis of Underlay CRN in the Presence of Correlated and Imperfect Channel,” **IEEE Transactions on Cognitive Communications and Networking**, 2023.

[35] P. Kumar, S. Bhattacharyya, S. Darshi, S. Majhi, A. A. Almohammedi, and S. Shailendra, “Outage Analysis Using Probabilistic Channel Model for Drone Assisted Multi-User Coded Cooperation System,” ***IEEE Transaction on Vehicular Technology***, 2023.

[36] P. Kumar, S. Majhi, and S. Paul, “A Direct Construction of Golay Complementary Pairs and Binary Complete Complementary Codes of Length Non-Power of Two,” ***IEEE Transactions on Communications***, 2023.

[37] M.S. Akhtar, J. Gupta, M.I. Alam, S. Majhi, A. Adhya, “Fronthaul latency and capacity constrained cost-effective and energy-efficient 5G C-RAN deployment,” ***Optical Fiber Technology***, vol. 80, 2023

[38] P. Deshmukh, G.S.R. Satyanarayana, S. Majhi, U.K. Sahoo, and S.K. Das, “Swin transformer based vehicle detection in undisciplined traffic environment,” ***Expert Systems with Applications***, 213, pp.118992, 2023.

[39] V. K. Kappala, J. Pradhan, N. Pawar, A. K. Turuk, S. Majhi, and S. K. Das, “Design and implementation of auto-tracking system for FSO link under pointing error," ***Optical and Quantum Electronics volume***, vol. 55, no. 2, pp. 170, 2023.

[40] G. Ghosh, S. Majhi, S. Paul, “Construction of Optimal Binary Z-Complementary Code Sets with New Lengths Using Generalized Boolean Function,” ***Cryptography and Communications***, 2023.

[41] V. K. Kappala, J. Pradhan, N. Pawar, A. K. Turuk, S. Majhi, S. K. Das, “Design and implementation of auto-tracking system for FSO link under pointing error,” ***Optical and Quantum Electronics***, Vol. 55, No. 2, 2023

[42] A. Roy and S. Majhi “Lower bounds on the maximum cross-correlations of 2-D quasi-complementary array sets,” Accepted in ***Cryptography and Communications***, 2023

[43] P. Deshmukh, S. Majhi, U. K. Sahoo, and S. K. Das, “Vehicle detection in diverse traffic using an ensemble convolutional neural backbone via feature concatenation,” Accepted in ***Transportation Letters***, 2023

[44] S. Jain, and S. Majhi, “Zero-Attracting Kernel Maximum Versoria Criterion Algorithm for Nonlinear Sparse System Identification,” ***IEEE Signal Processing Letter***, vol. 29, pp. 1546-1550, 2022.

[45] A. Kumar, S. Majhi, and H. C. Wu, “Physical-Layer Security of Underlay MIMO-D2D Communications by Null Steering Method Over Nakagami-m and Norton Fading Channels,” ***IEEE Transactions on Wireless Communications***, vol. 21, no. 11, pp. 9700-9711, 2022.

[46] P. Kumar, P. Sarkar, S. Majhi, and S. Paul, “A direct construction of even length ZCPs with large ZCZ ratio,” ***Cryptography and Communications***, vol. 15, no. 1, pp. 85-94, 2023.

[47] S. Jain, and S. Majhi, “Zero-Attracting Kernel Maximum Versoria Criterion Algorithm for Nonlinear Sparse System Identification,” ***IEEE Signal Processing Letter***, vol. 29, pp. 1546-1550, 2022.

[48] A. Kumar, S. Majhi, and H. C. Wu, “Physical-Layer Security of Underlay MIMO-D2D Communications by Null Steering Method Over Nakagami-m and Norton Fading Channels,” ***IEEE Transactions on Wireless Communications***, vol. 21, no. 11, pp. 9700-9711, 2022.

[49] P. Kumar, P. Sarkar, S. Majhi, and S. Paul, “A direct construction of even length ZCPs with large ZCZ ratio,” ***Cryptography and Communications***, vol. 15, no. 1, pp. 85-94, 2023.

[50] S. Kumar and S. Majhi, "Design and Testbed Implementation of Multiuser CFOs Estimation for MIMO SC-FDMA System,” ***IEEE Transactions on Signal Processing***, vol. 70, pp. 1880-1889, 2022.

[51] G. Ghosh, S. Majhi, P. Sarkar, and A. K. Upadhaya, “Direct construction of optimal Z-complementary code sets with even lengths by using generalized Boolean functions,” ***IEEE Signal Processing Letter***, vol. 29, pp. 872-876, 2022.

[52] A. Kumar, S. Majhi, G. Gui, H.-C. Wu, and C. Yuen, " A Survey of Blind Modulation Classification Techniques for OFDM Signals," ***Sensors***, vol. 22, no. 3, pp. 1020, 2022.

[53] S. Kumar and S. Majhi,"Design and Testbed Implementation of Multiuser CFOs Estimation for MIMO SC-FDMA System,” ***IEEE Transactions on Signal Processing***, vol. 70, pp. 1880-1889, 2022.

[54] P. Kumar, P. Sarkar, S. Majhi, and S. Paul, "A direct construction of even length ZCPs with large ZCZ ratio," Accepted in ***Cryptography and Communications***, 2022

[55] S. Jain and S. Majhi, "Zero-Attracting Kernel Maximum Versoria Criterion Algorithm for Nonlinear Sparse System Identification," Accepted in ***IEEE Signal Processing Letters***, 2022.

[56] Ghosh, S. Majhi, P. Sarkar, and A. K. Upadhaya, " Direct Construction of Optimal Z-Complementary Code Sets with Even Lengths by Using Generalized Boolean Functions," Accepted in ***IEEE Signal Processing Letters***, 2022.

[57] A. Kumar, S. Majhi, G. Gui, H.-C. Wu, and C. Yuen, " A Survey of Blind Modulation Classification Techniques for OFDM Signals," ***Sensors***, vol. 22, no. 3, pp. 1020, 2022.

[58] R. Kumar, P. Sarkar, P. K. Srivastava, and S. Majhi, "A Direct Construction of Asymptotically Optimal Type-II ZCP for Every Possible Even Length," ***IEEE Signal Process. Lett.***, vol. 28, pp. 1799-1802, 2021.

Before Joining IISc

[59] V. K. Kappala, J. Pradhan, A.K. Turuk, V.N.H. Silva, Sudhan Majhi, S.K. Das,"A Point-to-Multi-Point Tracking System for FSO Communication,” ***IEEE Trans. Instrum. Meas.***, vol 70, 2021.

[60] M. S. Chaudhari, S. Kumar, R. Gupta, M. Kumar, Sudhan Majhi,"Design and Testbed Implementation of Blind Parameter Estimated OFDM Receiver,” ***IEEE Trans. Instrum. Meas.***, vol. 71, 2021.

[61] A. K. Pathy, A. Kumar, R. Gupta, S. Kumar, and S. Majhi, ” Design and Implementation of Blind Modulation Classification for Asynchronous MIMO-OFDM System,” ***IEEE Trans. Instrum. Meas.,*** vol. 70, pp. 1-11, 2021.

[62] Gupta, Jitendra, Md Shahbaz Akhtar, Aneek Adhya, and S.Majhi, "Optimal planning and design of SRLG-aware survivable LR-PON for wireless and FTTx networks," ***Computer Networks***, vol. 194, pp. 108142, 2021.

[63] P. Sarkar, S. Majhi, and Z. Liu, "Pseudo-Boolean Functions for Optimal Z-Complementary Code Sets with Flexible Lengths," ***IEEE Signal Process. Lett.***, vol. 28, pp. 1350-1354, 2021.

[64] N. Nandan, S. Majhi, and H.-C. Wu, “Beamforming and Power Optimization for Physical Layer Security of MIMO-NOMA Based CRN Over Imperfect CSI,” ***IEEE Trans. Veh. Technol.,*** vol. 70, no. 6, pp. 5990-6001, June 2021.

[65] G. S. R. Satyanarayana, S. Majhi, and S. K. Das, “A Vehicle Detection Technique Using Binary Images for Heterogeneous and Lane-Less Traffic,” ***IEEE Trans. Instrum. Meas.,*** vol. 70, pp. 1-14, 2021.

[66] Md S. Akhtar, A. Adhya, J. Gupta, and S Majhi, “Cost-optimal architecture design for adaptive multi-stage TWDM-PON with PtP WDM overlay,” ***Optical Engineering,*** vol. 60, no. 1, pp. 015106, 2020.

[67] A. Roy, P. Sarkar, and S. Majhi, "A Direct Construction of q-Ary 2-D Z-Complementary Array Pair Based on Generalized Boolean Functions," ***IEEE Commun. Lett.,*** vol. 25, no. 3, pp. 706-710, March 2021.

[68] Z. Haque, V.S. Kumar, and S. Majhi, “A Closed-form Secrecy Outage Probability for mmWave Communication by

Ordered Transmit Beamforming," ***IEEE Commun. Lett.,*** vol. 25, no. 3, pp. 721-725, March 2021.

[69] P. Sarkar and S. Majhi, "A Direct Construction of Optimal ZCCS With Maximum Column Sequence PMEPR Two for MC-CDMA System," ***IEEE Commun. Lett.,*** vol. 25, no. 2, pp. 337-341, Feb. 2021.

[70] S. Das and S. Majhi, "Two-Dimensional -Complementary Array Code Sets Based on Matrices of Generating Polynomials," ***IEEE Trans. Signal Process.,*** vol. 68, pp. 5519-5532, 2020.

[71] S. Das, U. Parampalli, S. Majhi, Z. Liu, and S Budishin, "New Optimal Z Complementary Code Sets Based on Generalized Paraunitary Matrices," ***IEEE Trans. Signal Process.,*** vol. 68, pp. 5546-5558, 2020.

[72] P. Sarkar, S. Majhi, and Z. Liu, "A Direct and Generalized Construction of Polyphase Complementary Sets with Low PMEPR and High Code-Rate for OFDM System," ***IEEE Trans. Commun.,*** vol. 68, no. 10, pp. 6245-6262, Oct. 2020.

[73] S. Majhi, "Intelligent and secure transceiver design and implementation for future wireless communication," ***CSI Transactions on ICT,*** Springer, 2020.

[74] A. Samsad, S. Majhi, "A Near-Optimal and Low-Complex Joint Multiuser Detection for QCSS-MC-CDMA System," ***IEEE Systems Journal,*** vol. 15, no. 2, pp. 1594-1603, June 2021.

[75] P. Sarkar, A. Roy, and S.Majhi, "Construction of Z-Complementary Code Sets with Non-Power-of-Two Lengths Based on Generalized Boolean Functions", ***IEEE Commun. Lett.,*** vol. 24, no. 8, pp. 1607-1611, Aug. 2020.

[76] R. Gupta, S. Kumar, S. Majhi, "Blind Modulation Classification for Asynchronous OFDM Systems Over Unknown Signal Parameters and Channel Statistics," ***IEEE Trans. Veh. Technol.,*** vol. 69, no. 5, pp. 5281-5292, May 2020.

[77] S. Kumar, M. Chaudhari, R. Gupta, S. Majhi, "Multiple CFOs Estimation and Implementation of SC-FDMA Uplink System Using Oversampling and Iterative Method," ***IEEE Trans. Veh. Technol.,*** vol. 69, no. 6, pp. 6254-6263, June 2020.

[78] Avik R. Adhikary, P. Sarkar and S. Majhi, "A Direct Construction of q-ary Even Length Z-Complementary Pairs Using Generalized Boolean Functions" ***IEEE Signal Process. Lett.,*** vol. 27, pp. 146-150, 2020.

[79] A. R. Adhikary, S. Majhi, Z. Liu, and Y. L. Guan; "New Sets of Optimal Odd-length Binary Z-Complementary Pairs," ***IEEE Trans. Inf. Theory,*** vol. 66, no. 1, pp. 669-678, Jan. 2020.

[80] Avik R. Adhikary and S. Majhi, "New Constructions of Complementary Sets of Sequences of Lengths Non-Power-of- Two," ***IEEE Commun. Lett.,*** vol. 23, no. 7, pp. 1119-1122, July 2019.

[81] S. Das, Sudhan Majhi, S. Budishin, and Z. Liu, "A New Construction Framework for Polyphase Complete Complementary Codes with Various Lengths," ***IEEE Trans. Signal Process.,*** vol. 67, no. 10, pp. 2639-2648, 15 May, 2019.

[82] S. Kumar, and S. Majhi, "Blind Symbol Timing Offset Estimation for Offset-QPSK Modulated Signals," ***ETRI Journal,*** vol. 42, no. 3, pp. 324-332, 2020.

[83] A.R. Adhikary and S. Majhi, "New Construction of Optimal Aperiodic Complementary Sequence Sets of Odd-lengths," ***IEEE Commun. Lett.,*** vol. 23, no. 7, pp. 1119-1122, July 2019.

[84] R. Gupta, S. Majhi, O. Dobre, "Design and Implementation of a Tree-Based Blind Modulation Classification Algorithm for Multiple-Antenna Systems," ***IEEE Trans. Instrum. Meas.,*** vol. 68, no. 8, pp. 3020-3031, Aug. 2019.

[85] P. Sarkar, S. Majhi, H. Vetticalladi, and A. S. Mahajumi, "A Direct Construction of Inter-Group Complementary Code Set," ***IEEE Access,*** vol. 6, pp. 42047-42056, 2018.

[86] P. Sarkar, S. Majhi, Zilong Liu, "Optimal Z-complementary Code Set From Generalized Reed-Muller Codes," ***IEEE Trans. Commun.,*** vol. 67, no. 3, pp. 1783-1796, March 2019.

[87] A. R. Adhikary, S. Majhi, Zilong Liu, Yong Liang Guan, " New Sets of Even-Length Binary Z-Complementary Pairs With Asymptotic ZCZ Ratio of 3/4," ***IEEE Signal Process. Lett.,*** vol. 25, no. 7, pp. 970-973, July 2018.

[88] S. Das, S. Majhi, Z. Liu, "A Novel Class of Complete Complementary Codes and Their Applications for APU Matrices," ***IEEE Signal Process. Lett.,*** vol. 25, no. 9, pp. 1300-1304, Sept. 2018.

[89] N. Nandan, S. Majhi, H.C. Wu, "Secure Beamforming for MIMO-NOMA Based Cognitive Radio Network," ***IEEE Commun. Lett.,*** vol. 22, no. 8, pp. 1708-1711, Aug. 2018.

[90] S. Kumar, S. Majhi, Y. Chau, "Multi-user CFOs Estimation for SC- FDMA System Over Frequency Selective Fading Channels," ***IEEE Access,*** vol. 6, pp. 43146-43156, 2018.

[91] N. Nandan, S. Majhi, and H. C. Wu, "Maximizing Secrecy Capacity of Underlay MIMO-CRN through Bi-Directional Zero-Forcing Beamforming," ***IEEE Trans.Wireless Commun.,*** vol. 17, no. 8, pp. 5327-5337, Aug. 2018.

[92] X. Song, N. Babu, W. Rave, S. Majhi, and G. Fettweis, "Two-Level Spatial Multiplexing using Hybrid Beamforming Antenna Arrays for mm Wave Communications," ***IEEE Trans. Wireless Commun.,*** vol. 17, no. 7, pp. 4830-4844, July 2018.

[93] S. Majhi and N. Nandan, "Secrecy Capacity Analysis of MIMO System over Multiple Destinations and Multiple Eavesdroppers," ***Wireless Personal Communications, Springer,*** vol. 100, no. 3, pp. 1009-1022, 2018

[94] S. Das, S. Budishin, S. Majhi, Z. Liu, and Y. L. Guan, "A Novel Multiplier-Free Generator for Complete Complementary Codes," ***IEEE Trans. Signal Process.,*** vol. 66, no. 5, pp. 1184 - 1196, Mar. 2018.

[95] M. Kumar and S. Majhi, "Joint signal detection and synchronization for OFDM based cognitive radio networks and its implementation", ***Wireless Networks, Springer,*** pp. 1-14 September 2017.

[96] S. Majhi, R. Gupta, W. Xiang, and S. Glisic, “Hierarchical Hypothesis and Feature based Blind Modulation Classification for Linearly Modulated Signals,” ***IEEE Trans. Veh. Technol.,*** vol. 66, no. 12, pp. 11057 - 11069, Dec. 2017.

[97] S. Majhi, M. Kumar, and W. Xiang, “Implementation and Measurement of Blind Wireless Receiver Testbed for Single Carrier Systems,” ***IEEE Trans. Instrum. Meas.,*** vol. 66, no. 8, pp. 1965 – 1975, Aug. 2017.

[98] A. R. Adhikari, Z. Liu, Y. L. Guan, S. Majhi, S. Budishin; " Optimal Binary Periodic Almost-Complementary Pairs," ***IEEE Signal Process. Lett.,*** vol. 23, no. 12, pp. 1816-1820, Dec. 2016.

[99] S. Majhi and T. S. Ho, “Blind Symbol Rate Estimation and Testbed Implementation for OQPSK Modulated Signals”, ***IEEE Trans. Veh. Technol.,*** vol. 64, no. 3, pp. 954-963, March 2015.

[100] S. Majhi, P. Richardson, “Capacity Analysis of Orthogonal Pulse-Based TH-UWB signals,” ***Wireless Personal Communications and Networking,*** Vol.64, No.2, pp. 255-272, 2012.

[101] S. Majhi**,** P. Richardson, “Power Spectral Analysis of Orthogonal Pulse-Based TH-UWB Signals,” **International Journal of Communications,** *Network and System Sciences,* Vol. 3, No. 11. pp. 843-849, 2010.orward relaying over asymmetric fading environments,” **International Journal of Communications, Network and System Sciences,** Vol. 3, pp. 430-433, 2010.

[102] S. Majhi, A. S. Madhukumar, A. B. Premkumar, and P. Richardson, “Combining OOK with PSM Modulation for TH- UWB Radio Systems: A Performance Analysis," ***EURASIP Journal on Wireless Communications and Networking***, Vol. (2008), pp.1-11, 2008.

[103] A. S. Madhukumar, Zhen Ye, and **Sudhan Majhi**, “Coexisting Narrowband and Ultra Wideband Systems: Analysis of Power Spectral Density and In-band Interference Power,” ***World Scientific and Engineering Academy and Society (WSEAS),*** Vol. 6, No. 2, pp. 318-324, Feb. 2007.

[104] S. Majhi, A. S. Madhukumar, and A. B. Premkumar, “Performance of orthogonal based modulation schemes for TH-UWB communication systems,” ***IEICE Electronics Express***, Vol. 4, No. 8, pp. 238-244, 2007.

[105] S. Majhi, A. S. Madhukumar, and A. B. Premkumar, ”Reduction of UWB interference at NB systems based on a generalized pulse waveform,” ***IEICE Electronics Express***, Vol.3, No.14, pp. 361-367, 2006.

Patents

[106] R. Gupta and S. Majhi, “A Blind Modulation Classification Method for Determining Modulation Format of a Received Signal, IN Patent No. 201931044144, Dated 31/10/2019.

[107] Sudhan Majhi and Manish Kumar, “Blind Wireless Receiver Testbed Implementation for Single Carrier Systems,” India Patent Application No. 1337/KOL/2014, Dated 22.12.2014.

[108] Sudhan Majhi, Rahul Kumar, and B Jeevan Prakash, “A Blind Modulation Classification (BMC) Method for Linearly Modulated Signal over Single Carrier Systems,” Indian Patent Application No. 201631001884 of 19.01.2016.

[109] A. Kumar, S. Jain and S. Majhi, “Channel Estimator and Symbol Detector for OTFS Systems Impaired by Impulsive Noise, IN Patent No. 202341085757, Dated 12/01/2024.

[110] N. Kumar, S. K. Jha and S. Majhi, “Method and System for Generating Sequences in Code Division Multiple Access (SDMA) System, IN Patent No. 202441029832, Dated 12/04/2024.

[111] A. Kumar, and S. Majhi, “Automatic Modulation Classification for Orthogonal Frequency Division Multiplexing (OFDM) Systems", IN Patent No. 202441029179, Dated 10/04/2024.

[112] A. Kumar, and S. Majhi, “Index Modulation Based on Pilot Location for an Orthogonal Time Frequency Space Based Dual Function RADAR and Communication System", IN Patent No. 202441055105., Dated 10/04/2024.

Book Chapter

[113] Book Series Editor of IoT and Wireless Communication Networks, Springer, 2023.

[114] Associate Editor of IEEE Wireless Communication Letter, 2023.

[115] P. Sarkar and Sudhan Majhi, “A Direct Construction of Intergroup Complementary Code Set for CDMA,” chapter in the book “Error Detection and Correction” published by IntechOpen, 2019.

[116] Sudhan Majhi and Y. Nasser and J. -F. Helard, “Orthogonal Pulse-Based Time Hopping Ultra Wideband Radio Systems” book "Ultra wide band communication technology ", published by Sciyo 2011.

[117] Sudhan Majhi Y. Nasser and J. -F. Helard, “Outage probability analysis of cooperative communications over asymmetric fading channel,” *book "Communications and Networking"*, published by Sciyo 2010.

Book:

[118] S. Majhi, R. P. de Prado, C. D. Nanjundaiah, “Distributed Computing and Optimization Techniques,” Springer, 2022.

Conference Papers:

[119] R. Kumar, P. K. Srivastava and S. Majhi, "A New Construction of Optimal Symmetrical ZCCS," 2024 IEEE International Symposium on Information Theory (ISIT), Athens, Greece, 2024, pp. 1748-1752, doi: 10.1109/ISIT57864.2024.10619512.

[120] A. Kumar and S. Majhi, "Spectrum Efficient Anti-Jamming for OTFS Systems," 2024 IEEE Wireless Communications and Networking Conference (WCNC), Dubai, United Arab Emirates, 2024, pp. 1-6, doi: 10.1109/WCNC57260.2024.10571264.

[121] A. Ray, and S. Majhi, Subhabrata Paul, "Spatial Modulation and Differential Spatial Modulation for Ambient Backscatter Communication Over Linearized Channel," Accepted in ***IEEE Wireless Communications and Networking Conference (WCNC)***, 2024.

[122] A. Kumar, and S. Majhi, "Resource Efficient Anti-jamming for Delay-Doppler domain Jammers," Accepted in ***IEEE Wireless Communications and Networking Conference (WCNC)***, 2024.

[123] Nishant Kumar, Sudhan Majhi, Subhabrata Paul, "A New and Direct Construction of Asymptotically Optimal Multiple Sets of Multiple Zero-Correlation Zone Sequence Sets," Accepted in ***IEEE International Symposium on Information Theory (ISIT)***, 2023.

[124] Abhishek Roy, Sudhan Majhi, "A Direct Construction of Multiple Shift Complementary Sets of Arbitrary Lengths," Accepted in ***IEEE International Symposium on Information Theory (ISIT)***, 2023.

[125] Praveen Kumar, Sudhan Majhi, Subhabrata Paul, "A Direct Construction of Optimal Symmetrical Z-Complementary Code Sets of Prime Power Lengths," Accepted in ***IEEE International Symposium on Information Theory (ISIT)***, 2023.

[126] A. Kumar and S. Majhi, "PIM-OTFS Based DFRC System in Limited Feedback and High Mobility Scenarios," **IEEE Wireless Communications and Networking Conference (WCNC), Glasgow, United Kingdom**, 2023, pp. 1-6.

[127] X. Wang, Y. Hu, Sudhan Majhi, K. Kang, H. Qian,"Serving the Mobile User in Massive MIMO System." **13th IEEE International Conference on Wireless Communications and Signal Processing (WCSP),** 2021.

[128] Harsha, S.Kumar, S. Singh, and Sudhan Majhi,"CFO Estimation for Multi-user Uplink SC-FDMA Using Null Subcarrier and Deterministic Approach." **IEEE International Conference on Information and Communication Technology,** 2021.

[129] M. S. Chaudhari and Sudhan Majhi, "Automated Intermediate Frequency Carrier Estimation by Using Deep Neural Network." **IEEE International Conference on Computing and Communications Applications and Technologies,** 2021.

[130] A. Kumar, S. Perveen, S. Singh, A. Kumar, Sudhan Majhi and S. K. Das, "6th Generation: Communication, Signal Processing, Advanced Infrastructure, Emerging Technologies and Challenges." **6th IEEE International Conference on Computing, Communication and Security (ICCCS),** 2021.

[131] H Harsha, S Kumar, and Sudhan Majhi, "Blind CFO Estimation for Multi-user in SC-FDMA Uplink Systems Using Variance Minimization," **International Wireless Communications and Mobile Computing (IWCMC)**, 2021

[132] S. Akhtar, J. Gupta, P. Biswas, A. Adhya, and Sudhan Majhi, "Heuristic-Based Cost-Efficient C-RAN Fronthaul Deployment Over TWDM-PON." **In 5th IEEE International Conference on Recent Advances and Innovations in Engineering (ICRAIE),** pp. 1-6, 2020.

[133] Md S. Akhtar, P.Biswas, A. Adhya, Sudhan Majhi, "Cost-efficient Mobile Backhaul Network Design over TWDM-PON," **IEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS)**, pp. 1-6, 2020

[134] M. S Chaudhari and Sudhan Majhi, "Automated Symbol Rate Estimation Over Frequency-Selective Fading Channel by Using Deep Neural Network," **IEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS)**, pp. 1-6, 2020

[135] I. Trivedi, Sudhan Majhi, "Span Level Model for the Construction of Scientific Knowledge Graph Authors," 5th International Conference on Computing, **Communication and Security (ICCCS)**, pp. 1-6, 2020

[136] R. Hazra, Sudhan Majhi, "Detecting Respiratory Diseases from Recorded Lung Sounds by 2D CNN," 5th International Conference on Computing, **Communication and Security (ICCCS)**, pp. 1-6, 2020

[137] M Banerjee and Sudhan Majhi, "Multi-class Heart Sounds Classification Using 2D-Convolutional Neural Network," 5th International Conference on Computing, **Communication and Security (ICCCS)**, pp. 1-6, 2020

[138] S Parida, Sudhan Majhi, and SK Das, "Wireless Powered Microwave and mmWave based Communication Networks-A Survey, **International Conference on Inventive Computation Technologies (ICICT)**, India, pp. 1-6, 2020

[139] N. Nandan, and Sudhan Majhi, "Physical Layer Security of Full-Duplex Cognitive Radio Network Using Beamforming," ,**In IEEE International Conference on Internet of Things, Embedded Systems and Communications (IINTEC),** pp. 100-105, 2019.

[140] S. Das, U. Parampalli, Sudhan Majhi and Z. Liu, "Construction of new optimal Z-complementary code sets from

Z-paraunitary matrices." **In Ninth IEEE International Workshop on Signal Design and its Applications in Communications (IWSDA),** pp. 1-5, 2019.

[141] P. Biswas, A. Adhya, S. Akhtar, J. Gupta, and Sudhan Majhi, "EDFA Active-sleep Transition Frequency and EDFA Occupancy Aware Dynamic Traffic Provisioning for Energy-efficient IP-over-EON," International Conference on Signal Processing and Communication Systems, 2019

[142] S. Das, U. Parampalli, Sudhan Majhi and Z. Liu, "An Introduction to Z-Paraunitary Matrices," International Workshop on Signal Design and its Applications in Communications (IWSDA'19), Dongguan, China, 2019.

[143] R. Gupta, S. Kumar, Sudhan Majhi, "Blind Modulation Classification for OFDM in the Presence of Timing, Frequency, and Phase Offsets," Vehicular Technology Conference Fall, Resent Results,2019.

[144] S. Das, U. Parampalli, Sudhan Majhi, and Z. Liu, "Near-Optimal Zero Correlation Zone Sequence Sets from Paraunitary Matrices," IEEE International Symposium on Information Theory (ISIT), Paris, 2019.

[145] P. Sarkar, Sudhan Majhi, and Z. Liu, "A Direct and Generalized Construction of Polyphase Complementary Set With Low PMEPR," IEEE International Symposium on Information Theory (ISIT), Paris, 2019.

[146] S. Das, Sudhan Majhi and P. Sarkar, "An Improved Multiplier-free Generator for Polyphase Complete Complementary Codes," 10th International Conference on Sequences and Their Applications, Hong Kong, 2018

[147] R. Gupta, S. Majhi, and O. Dobre, "Blind Modulation Classification of Different Variants of QPSK and 8-PSK for Multiple-Antenna Systems with Transmission Impairments," IEEE 88th Vehicular Technology Conference (VTC-Fall), Chicago, USA, 2018.

[148] R. Gupta, S. Majhi, and O. Dobre, "Blind Modulation Classification of Different Variants of QPSK and 8-PSK for Multiple-Antenna Systems with Transmission Impairments," IEEE 88th Vehicular Technology Conference (VTC-Fall), Chicago, USA, 2018.

[149] S. Majhi, M. Kumar and W. Xiang, "Implementation and Measurement of Blind Wireless Receiver for Single Carrier Systems," International Instrumentation and Measurement Technology Conference, USA, 2018.

[150] N. Nandan and S. Majhi, "Secrecy Outage Analysis by Applying Bi-directional Beamforming in Underlay MIMO-CRN," 14th International Wireless Communications and Mobile Computing Conference, Cyprus, 2018.

[151] M. Kumar and S. Majhi, "An Efficient Blind CFO Estimation Technique for MIMO-OFDM Systems Using Space-time Diversity," 14th International Wireless Communications and Mobile Computing Conference, Cyprus, 2018.

[152] S. Das, S. Majhi, S. Budisin, Z. Liu and Y. L. Guan, " A Novel Multiplier-Free Generator for Complete Complementary Codes," in Proc. IEEE Asia-Pacific Conference on Communications (APCC), Dec., 2017, pp. 1-6.

[153] S. Majhi, R. Gupta, and W. Xiang, "Novel Blind Modulation Classification of Circular and Linearly Modulated Signals Using Cyclic Cumulant," in Proc. IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), Oct., 2017, pp. 1-5.

[154] R. Adhikary, S. Majhi, Z. Liu, and Y. L. Guan; "New Optimal Binary Z-Complementary Pairs of Odd Length", in Proc. IEEE International Workshop on Signal Design and its Applications in Communications (IWSDA), Sep., 2017, pp. 14-18.

[155] S. Singh, A. Adhikary, A. Samad, and S. Majhi, "Design and Performance Analysis of Quasi-Asynchronous SC-FDMA-CDMA System using Quasi Complementary Sequence Sets," in Proc. IEEE International Conference on Advances in Computing, Communications, and Informatics, Nov., 2016, pp. 1752 - 1756.

[156] P. Kumar, S. Majhi and Y. Nasser, "Analysis of Outage Performance of Opportunistic AF OFDM Relaying in Nakagami-m Channels," in Proc. IEEE International Conference on Advances in Computing, Communications, and Informatics, Nov.,2016, pp. 2527 – 2531.

[157] A. Samad, A. R. Adhikary, and S. Majhi, "Receiver Design for Quasi-Asynchronous MC-CDMA by using QCSS Code", in Proc. IEEE International Conference on Communication and Signal Processing (ICCSP), Apr., 2016, pp. 1159 - 1163.

[158] S. Majhi, A. Gupta, P. Kumar, and Y. Nasser, "A Closed-Form Outage Probability of Opportunistic AF OFDMA Relaying over Rician Fading Channel," in Proc. IEEE International Conference on Communication and Signal Processing (ICCSP), Apr., 2016, pp. 0442 – 0447.

[159] S. Majhi, P. Kumar, and Y. Nasser "Outage Probability of Opportunistic AF OFDM Relaying over Rician Fading Channel," in Proc. IEEE International Conference on Telecommunications (ICT), May, 2016, pp. 0442 - 0447.

[160] M. Kumar and S. Majhi, "Blind Synchronization of OFDM System and CRLB Derivation of CFO over Fading Channels," in Proc. IEEE International Conference on Information, Communications, and Signal Processing, Dec., 2015, pp. 1-6.

[161] S. Majhi, B J. Prakash, and M. Kumar, "Blind Wireless Receiver Performance for Single Carrier Systems," in Proc. IEEE International Conference on Communication and Signal Processing, Apr., 2015, pp. 0521 – 0525.

[162] S. Majhi and W. Xiang, "Blind Symbol Rate Estimation and Testbed Implementation for Linearly Modulated Signals,'' in Proc. IEEE Vehicular Technology Conference (VTC Fall), Sep, 2013, pp. 1-5.

[163] Sudhan Majhi, C. Yading, S. H. Ting, "Design and Implementation of a Universal Receiver Testbed for Single Carrier and Multicarrier Signals on NI PXIe Platforms," Best Award in academic Section of NI ASEAN Graphical System Design Achievement Awards 2012.

[164] SudhanMajhi, Hua Qian, Weidong Xiang, Sateesh Addepalli and Zhenguo Gao, "Analysis of Outage Probability for Opportunistic Decode-and-Forward Relaying Network over Asymmetric Fading Channels,'' in Proc. 2011 IEEE International Conference on Ubiquitous and Future Networks, Jun., pp. 135 – 139.

[165] Sudhan Majhi, Y. Nasser and J. -F. Helard, "Outage performance of opportunistic decode-and-forward relaying over asymmetric fading environments," in Proc. 2010 IEEE International Symposium on Personal Indoor and Mobile Radio Communications, Sep., pp. 362 – 367.

[166] Sudhan Majhi, R. Raulefs, Y. Nasser, A. Dammann and J. –F. Helard, "Geo-Location Aided Cooperative Communication," in Proc. 2010 IEEE Workshop on Positioning, Navigation and Communication, Mar., pp. 264 - 269.

[167] Sudhan Majhi and Paul Richardson, "Reduction of dynamic spectral ranges for Orthogonal Pulse Based Modulation Schemes for TH-UWB Systems," in Proc. 2010 European wireless.

[168] Sudhan Majhi, Y. Nasser and J. –F. Helard, "Power Spectral Analysis of Orthogonal Pulse Based Modulation Schemes for TH-UWB Systems," in Proc. 2010 IEEE Vehicular Technology Conference (VTC Spring), Jun. pp. 1-5.

[169] Sudhan Majhi, W. Xiang, A. S. Madhukumar, and A. B. Premkumar; "Theoretical Capacity Analysis of TH-UWB Systems for Orthogonal Pulse Based Modulation Schemes," in Proc. 2008 IEEE Vehicular Technology Conference (VTC FALL), Sep., pp. 1-5.

[170] W, Xiang, Y. Huang, and Sudhan Majhi, "The Design of a Wireless Access for Vehicular Environment (WAVE) Prototype for Intelligent Transportation System (ITS) and Vehicular Infrastructure Integration (VII)," in Proc. 2008 IEEE Vehicular Technology Conference,(VTC Fall), Sep., pp. 1-2. (Test bed demonstration)

[171] Z. Wen, T. Luo, W. Xiang, Sudhan Majhi, and Y. Ma, "Autoregressive Spectrum Hole Prediction Model for Cognitive Radio Systems," in Proc. 2008 IEEE International Conference on Communications (ICC), May, pp. 154-157.

[172] Sudhan Majhi, A. S. Madhukumar, A. B. Premkumar, and F. Chin, "M-ary Signaling for Ultra-Wideband Communication Systems Based on Pulse Position and Orthogonal Pulse Shape Modulation," in Proc. 2007 IEEE Wireless Communication and Networking Conference (WCNC), Mar., pp.2795-2799.

[173] Sudhan Majhi, A. S. Madhukumar, A. B. Premkumar, and F. Chin, "A Hybrid M-ary Modulation Scheme for Time Hopping UWB Communication Systems," in Proc. 2007 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Apr., pp.III-573 - III-576.

[174] Sudhan Majhi, A. S. Madhukumar, A. B. Premkumar, and F. Chin, "Modulation Schemes Based on Orthogonal Pulses for Time Hopping Ultra-Wideband Radio Systems," in Proc. 2007 IEEE International Conference on Communications (ICC), Jun., pp.4185-4190.remkumar, and F. Chin, "A Novel Pulse Waveform for Low Rate Ultra-Wideband Radio Transmission," in Proc. 2005 IEEE International Conference on Information Communication and Signal Processing (ICICS). Dec., pp. 816 – 820.

[175] Sudhan Majhi and D. K. Gupta, "Solving binary constraint satisfaction problems by using graph theory," National Conference of Applied Mathematics, India, 2004.

[176] Sudhan Majhi, Y. Nasser and J. -F. Helard, "Outage performance of opportunistic decode-and-forward relaying over asymmetric fading environments," in Proc. 2010 IEEE International Symposium on Personal Indoor and Mobile Radio Communications, Sep., pp. 362 – 367.

[177] Sudhan Majhi, R. Raulefs, Y. Nasser, A. Dammann and J. –F. Helard, "Geo-Location Aided Cooperative Communication," in Proc. 2010 IEEE Workshop on Positioning, Navigation and Communication, Mar., pp. 264 - 269.

[178] Sudhan Majhi and Paul Richardson, "Reduction of dynamic spectral ranges for Orthogonal Pulse Based Modulation Schemes for TH-UWB Systems," in Proc. 2010 European wireless.

[179] Sudhan Majhi, Y. Nasser and J. –F. Helard, "Power Spectral Analysis of Orthogonal Pulse Based Modulation Schemes for TH-UWB Systems," in Proc. 2010 IEEE Vehicular Technology Conference (VTC Spring), Jun. pp. 1-5.

[180] Sudhan Majhi, W. Xiang, A. S. Madhukumar, and A. B. Premkumar; "Theoretical Capacity Analysis of TH-UWB Systems for Orthogonal Pulse Based Modulation Schemes," in Proc. 2008 IEEE Vehicular Technology Conference (VTC FALL), Sep., pp. 1-5.

[181] W, Xiang, Y. Huang, and Sudhan Majhi, "The Design of a Wireless Access for Vehicular Environment (WAVE) Prototype for Intelligent Transportation System (ITS) and Vehicular Infrastructure Integration (VII)," in Proc. 2008 IEEE Vehicular Technology Conference,(VTC Fall), Sep., pp. 1-2. (Test bed demonstration)

[182] Z. Wen, T. Luo, W. Xiang, Sudhan Majhi, and Y. Ma, "Autoregressive Spectrum Hole Prediction Model for Cognitive Radio Systems," in Proc. 2008 IEEE International Conference on Communications (ICC), May, pp. 154-157.

[183] Sudhan Majhi, A. S. Madhukumar, A. B. Premkumar, and F. Chin, "M-ary Signaling for Ultra-Wideband Communication Systems Based on Pulse Position and Orthogonal Pulse Shape Modulation," in Proc. 2007 IEEE Wireless Communication and Networking Conference (WCNC), Mar., pp.2795-2799.

[184] Sudhan Majhi, A. S. Madhukumar, A. B. Premkumar, and F. Chin, "A Hybrid M-ary Modulation Scheme for Time Hopping UWB Communication Systems," in Proc. 2007 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Apr., pp.III-573 - III-576.

[185] Sudhan Majhi, A. S. Madhukumar, A. B. Premkumar, and F. Chin, "Modulation Schemes Based on Orthogonal Pulses for Time Hopping Ultra-Wideband Radio Systems," in Proc. 2007 IEEE International Conference on

Communications (ICC), Jun., pp.4185-4190.

[186] Sudhan Majhi, A. S. Madhukumar, A. B. Premkumar, and F. Chin, “A Novel Pulse Waveform for Low Rate Ultra-Wideband Radio Transmission,” in Proc. 2005 IEEE International Conference on Information Communication and Signal Processing (ICICS). Dec., pp. 816 – 820.

[187] Sudhan Majhi and D. K. Gupta, “Solving binary constraint satisfaction problems by using graph theory,” National Conference of Applied Mathematics, India, 2004.