

Dr. Sarat Kumar PATRA

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Indian Institute of Information Technology Vadodara,
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COMMUNICATION DETAILS

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G-SCHOLAR	:	Citations:1040, h-Index:14, i10-Index:25
R-GATE	:	Researchgate Score:24.16
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EDUCATION

1998	PhD (ELECTRICAL ENGINEERING), University of Edinburgh , Edinburgh, UK (Through Commonwealth Scholarship) Thesis: "Development of Fuzzy Based Channel Equalizers"
1992	M.Sc (ENGINEERING), Specialization in ELECTRONICS SYSTEMS AND COMMUNICATIONS National Institute of Technology , Rourkela,(formerly "Regional Engineering College") Odisha Thesis: "Development of Neural Network based Adaptive Equalizers"
1986	B.Sc (ENGINEERING), in ELECTRONICS AND TELE-COMMUNICATION Engineering Veer Surendra Sai University of Technology , formerly "University College of Engineering (UCE)", Sambalpur, Odisha

WORK EXPERIENCE

Employer	Post Held	Pay Scale	Period of Employment (From) To	
IIIT Vadodara	Prof & Director	Level 17 (7 th CPC)	05-08-2017	Till Date
NIT Rourkela	Professor	PB-IV, AGP Rs.10,000	01-07-2006	04-08-2017 (On Lien)
NIT Rourkela	Associate Prof	PB-IV, AGP -Rs.9000	01-01-2006	30-6-2006
NIT Rourkela	Asst. Prof.	12000-18300	22-12-1998	31-12-2005
REC Rourkela	Lecturer (Sr S)	3000-4500	22-12-1992	21-12-98
REC Rourkela	Lecturer	2200-4000	16-3-1989	21-12-92
DRDO	Scientist-B	2200-4000	29-9-1986	15-3-1989

RESEARCH PROJECT UNDERTAKEN

Name of the Investigator	Title of the project and duration	Amount (Lakhs)	Funding Agency
Prof S K Patra (Co - PI)	Development of a Hand Gesture Based Interface System for Remote Controlled Surveillance Mobile Robot	Rs. 28.6 (May, 2016 to April, 2019)	DRDO Extra mural research grant (Continuing)

Prof S K Patra	Consequence analysis and risk assessment for radiation hazards at Integrated Test Range, Chandipur, India (DRDO)	Rs 9.2 (2012)	ITR-DRDO Chandipur (Complete)
Prof S K Patra	FPGA based standalone tunable Fuzzy Logic Controller module	Rs 28.02 (2011)	BRFST, Ahmedabad (Complete)
Prof S K Patra	CARS project on Design and testing of BASE-BAND and RF front end for IEEE802.15.4 zigbee standard	Rs 7.5 (2010)	Anurag DRDO (Complete)
Prof S K Patra (Co-PI)	CARS project on Development of Data acquisition system for OTO-Melara naval gun	Rs. 7.8 (2010)	PXE,DRDO Chandipur, (Complete)
Prof S K Patra	CARS project on setting up comprehensive data network system for transmission of video, voice & data synchronized with time.	Rs. 9.0 (2009)	PXE,DRDO Chandipur, (Complete)
Prof S K Patra	National mission project on education through ICT, development of suitable pedagogical methods for various classes of intellectual caliber & research in e-learning course development for mobile communications	Rs. 10.0 (2009)	MHRD (Complete)
Prof S K Patra	Development of Mobile Communication Receiver algorithms on Embedded systems using Real Time Operating System	Rs. 12.0 (2005)	MHRD (Complete)
Prof S K Patra	Development of Adaptive Fuzzy System Based Receivers for Direct Sequence Code Division Multiple Access (DS-CDMA) Communication Systems	Rs. 7.0 (2002)	MHRD Completed

CONSULTANCY PROJECT

Name of the Investigator	Title of the project and duration	Amount (Lakhs)	Funding Agency
Prof S K Patra	Technical and Functional Testing of the customized GAGAN Enabled GPS PDAs of forest department	Rs 1.78 (2015)	Govt of Odisha, India (Completed)

ADMINISTRATIVE RESPONSIBILITY

Responsibility	Tenure	Remarks/Responsibility
Director, IIIT Vadodara	Aug 2017 - Contd	Founder Director of Indian Institute of Information Technology Vadodara (IIITV); an "Institute of National Importance" by the Act of Parliament
Institute's GIAN Coordinator	2015 - 2017 (till leaving to join IIIT Vadodara)	To coordinate the different GIAN courses conducted by NIT Rourkela, sponsored by MHRD
Member of BOG, NIT Rourkela	2014-2016	Senate nominee. Attending BOG meetings and participating in institute development and administration.

Member of Building and Works Committee; NIT Rourkela	2014-2016	BOG/ Senate nominee. Attending BWC meetings and participating in institute development
Dean (Faculty Welfare) NIT Rourkela	Jul 2012 - Jun 2015	<ol style="list-style-type: none"> 1. Faculty recruitment (online application submission & paperless procedure for faculty selection) 2. Online software for faculty Application, Scrutiny & interview process 3. Annual report preparation 4. Other routine administrative tasks
Chairman (Accreditation & Ranking), NIT Rourkela	Jul 2015 - Jun 2017	<ol style="list-style-type: none"> 1. Online data submission for ranking by various organizations like NIRF, QS, TIMES and etc 2. Institute appeared at 700-800 ranks in Times world ranking & 195 in Times BRICS & emerging economy ranking 2017 3. Institute appeared in 111/112 in QS BRICS ranking in 2016-2017. 4. NIRF ranking of NITR at 12 among engineering institutes (2nd among NITs). 5 NIT Rourkela NAAC Accreditation completed with "A" grade. 6. NBA accreditation process for eligible academic programs
Chairman (Curriculum Development Committee), NIT Rourkela	Jul 2016 - Jun 2018	<ol style="list-style-type: none"> 1. Curriculum modification for B Tech; Int MSc and M Tech (Dual Degree) in progress with following credit system : B.Tech - 150 credits, M.Tech (Dual) 200 credits and Int. MSc - 190 credits 2. Routine curriculum revision activities 3. M Tech and M.Sc curriculum revision on the anvil.
HOD, Dept of Electronics & Communication Engineering, NIT Rourkela	Jul 2008 - Jun 2011	<ol style="list-style-type: none"> 1. Routine department administrative work. 2. Conducted two national conferences in the tenure. 3. NBA accreditation of B.Tech Program for 5 years.
HOD, Computer Centre, NIT Rourkela	Jul 2005-Jun 2008 & Jul 2011-Jun 2012	<ol style="list-style-type: none"> 1. Establishing CAMPUS LAN 2. Establishing Server and storage infrastructure 3. Procurement of campus license for software 4. 24X7 operation of Computer Service through facility management service. 5. 150TB storage and blade server procurement. 6. On campus mailing solution based on Arithme and Zimbra.
Chairman (Computer and Networking Purchase Committee), NIT Rourkela	Jul 2012 to till date	<ol style="list-style-type: none"> 1. HPC installations (32 Nodes) 2. 500 TB storage installation 3. Data centre creation. 4. Cloud service creation 5. 40 Gbps core campus network upgrade

FOREIGN UNIVERSITY COLLABORATION

Sl. No.	Year of Collaboration	Foreign University
1.	2012	University of Cape Town, South-Africa.
2.	2013	Czech Technical University Prague, Czech Republic.
3.	2014	Mondragon University Spain.
4.	2015	Instiuto Superio Tecnico (IST), University of Lisbon, Portugal.

SHORT TERM COURSE CONDUCTED

Year and Month	Duration	Topic
Aug. 2017	2 Weeks	GIAN (Global Initiative of Academic Networks) - Optical Communication: A Front-runner for Future Wireless Networks (Funded by MHRD), Co-coordinator
March-2017	1 Weeks	GIAN (Global Initiative of Academic Networks) - Advanced Digital Signal Processing (Funded by MHRD), Co-coordinator
Sep.-2016	2 Weeks	GIAN (Global Initiative of Academic Networks) - Towards 5G networks (Funded by MHRD)
Sep 2015	2 Days	Moodle and Elearning- For Faculty members at NIT Rourkela
July 2014	1 Week	Pedagogy and e-learning for faculty members of NIT Rourkela
May 2013	2 Weeks	1G to 4G communication

CONFERENCES CONDUCTED

Year & Month	Responsibility	Topic
Jan 7 - 9, 2011	Chairman	International Conference on Electronic System (ICES-2011); Conducted at NIT Rourkela
Jan 30 - Feb 1, 2009	Co-Convener	National conference on recent advances in communication (NCRACKT); Conducted at NIT Rourkela

PHD THESIS SUPERVISED

Sl. No	Year	Name	Thesis Title	Status	Remarks
1	2021	Byomakesh Mahapatra	Networking & Secured Computing	Thesis Submitted	Co-Supervised With Prof. A. K. Turuk
2	2020	Varun Kumar	Nonasymptotic analysis of massive MIMO under different wireless scenario	Degree Awarded	
3	2019	S M Hiremath	On some signal processing algorithms applicable to cognitive radio communication	Degree Awarded	
4	2019	Madhusmita Mishra	Analysis & investigation of LDPC coded OFDM based wireless & optical wireless communication system	Degree Awarded	
5	2018	Satyendra Singh Yadav	Development of wireless communication algorithms on multicore/ many-core architectures	Degree Awarded	
6	2017	Subrata Maiti	Monostatic Ground Penetrating Radar Signal Modelling for Characterization of Subsurface Media	Degree Awarded	
7	2017	Bhaskara Rao Jammu	Development of FPGA based Standalone Tunable Fuzzy Logic	Degree Awarded	
8	2017	Mangal Singh	On PAPR Reduction of OFDM using Partial Transmit Sequence with Intelligent Optimization Algorithms	Degree Awarded	
9	2016	Umakanta Nanda	Design Techniques of Energy Efficient PLL for Enhanced Noise and Lock Performance	Degree Awarded	Co-Supervised With Prof. D P Acharya
10	2016	Chithra R	Interference Cancellation and Resource Allocation Approaches for Device-to-Device Communication	Degree Awarded	
11	2016	Prasanta Kumar Pradhan	On efficient signal processing algorithms for signal detection and PAPR reduction in OFDM systems	Degree Awarded	

12	2016	Pallab maji	On Design and Implementation of Generic Fuzzy Logic Controllers	Degree Awarded	
13	2015	Bibhudendra Acharya	On the development of Novel Encryption Methods for Conventional and Biometric Images	Degree Awarded	
14	2014	S Natarajamani	Some studies on design of planar antennas for UWB applications	Degree Awarded	Co-supervised With Prof. S K Behra
15	2014	S K Das	Quality of service estimation techniques for optical virtual private network over WDV/ DWDN Networks.	Degree Awarded	
16	2013	S K Nanda (Dept of Mining Engineering)	Noise Impact Assessment and Prediction in Mines Using Soft-Computing Techniques	Degree Awarded	Co-Supervised with Prof. D P Tripathy

CURRENT PHD STUDENTS UNDER SUPERVISION

Sl. No	Current Student	Degree	Co-Supervisor	Broad Area or Research
1	Swati Rai	PhD	Co-Supervision with Prof. Jignesh S. Bhatt	Medical Image De-noising
2	Mandar Jatkar	PhD	Co-Supervision with Prof. Kamal Kishor Jha	Investigation on 2-D Materials for Novel Electronics Devices and Circuits
3	Jaya Prakash Sahoo	PhD	Co-Supervision with Prof. S Ari	Gesture Recognition

M.TECH (R) THESIS SUPERVISED

Sl. No	Year	Name	Thesis Title	Status	Remarks
1	2017	Manas Ranjan Biswal	Some studies on RF Measurement and Modeling for Assessment of Radiation Hazard	Degree Awarded	
2	2015	Amitav Panda	Improved Vertical Handoff Scheme for K-tier Heterogeneous Wireless Networks	Degree Awarded	
3	2015	Goutam Kumar Sahoo	A framework for remote patient monitoring to diagnose the cardiac disorder	Degree Awarded	Co-Supervised with Prof. S Ari
4	2013	Bijaya Kumar Muni	Physical layer implementation of a class of ZigBee Baseband transceiver using FPGA	Degree Awarded	
5	2010	Sanatan Mohanty	Energy Efficient Routing Algorithms for Wireless Sensor Networks and Performance Evaluation of Quality of Service for IEEE 802.15.4 Networks	Degree Awarded	
6	2010	Devirani Guha	Artificial Neural Network Based Channel Equalization	Degree Awarded	
7	2006	Ipsita Bhanja	Performance Evaluation of Phase Optimized Spreading Codes in Non Linear DS-SS Receiver	Degree Awarded	

M.TECH PROJECT (THESIS) SUPERVISION

2019	
Hemant Aggarwal	On Reinforcement Learning framework for the Recommender Systems (Co-supervised with Prof. Pratik Shah)
2017	
Sudhanshu Arya	An Efficient Likelihood Based Automatic Modulation Classification for SISO and MIMO Wireless Communication Systems
Raju Naik M	Development of Resource Allocation Algorithms for Device to Device Communication
Arindam Dhar	Autonomous navigation for Micro Aerial Vehicles
Ranga Sumiran	Hardware acceleration of Genome sequence algorithm
Roshan Kumar Patro	FPGA Implementation of PAPR Reduction Technique for OFDM
2016	
B Subbareddy	Computationally Efficient Modified PTS for PAPR Reduction in MIMO OFDM
Ganta Rajan	Relay Assisted Device to Device Communication underlying Cellular Networks
Narayan Suvvada	Studies on Energy and Spectral Efficiency for Massive MIMO
Subham Jain	Simulation and Modelling of Power Line Channel
Manaj Mahapatra	FPGA Implementation of PAPR Reduction Technique for OFDM
Cyan Subhra Mishra	Hardware Acceleration of Genome Pipeline
2015	
Palkonda Reddy	Analysis of PAPR in OFDM with CSS
Pratthmesh Kittur	Channel Modelling For Underwater Wireless Communication System
Kaustabh Kale	Modelling and Characterization of Power Line Communication Channel
P.P Priyanka	Implementation of Time Reversal Technique for Energy Efficient Wireless Communication
Rahul Gopal	Analysis of PAPR Reduction in 5G Communication
2014	
Sadananda Behera	PTS Based low complexity receiver for multiuser STBC MC-CDMA
Seemanjali Sahoo	VHDL Implementation of Circularly Shifted PTS Technique for PAPR Reduction in OFDM
Sangeeta Bhattacharjee	Performance Evaluation of OFDM Based Wireless Communication Systems Using Graphics Processing Unit (GPU) Based High Performance Computing
Sourabh Bansod	Design of low cost virtual digital storage oscilloscope
Vijay Ratnam	DSP Implementation of channel estimation algorithms for OFDM systems
Abhishek Mitra	Smart design algorithms implementation in macro femto cell in hierarchical networks.
2013	
Ishita Gupta	Single IFFT block based reduced complexity partial transmit sequence technique for peak-to-average-power ratio reduction in OFDM
Shefalirani Patel	Interference Suppression in WCDMA using Decision Feedback Equalisation (DFE) with an adaptive thresholding technique
Jharana Dalai	VHDL implementation of spectrum sensing for cognitive Radio using Energy detection technique
Abhishek Kumar	FPGA implementation of LDPC codes.
2012	
Himanshu Bhusan Mishra	PAPR reduction of OFDM signals using selected mapping technique.
Bibhuti Bhusan Pradhan	Design of data acquisition system for artillery unit
Chithra R	Use of RNS Based Pseudo Noise Sequence in DS-SS and 3G WCDMA
Manish B. Dave	Spectrum sensing in cognitive radio:use of cyclo-stationary detector
2011	
Ashish Agarwal	DAB: Transmitter, Receiver and SVM Classifier
Subhashree Das	VHDL implementation of reed-solomon coding
V.V.Satyanarayana Eerla	Performance analysis of energy detection algorithm in cognitive radio.
Ravikanth Kanna	Design of zigbee transceiver for IEEE 802.15.4 using matlab/simulink

2010	
S Hiremath Pragyan Patnaik Arun Agarwal	Data Rate prediction for Cognitive Radio using fuzzy techniques Fuzzy Assisted inter cellular and intra cellular handoff Performance Analysis for Digital Audio Broadcast
2009	
Gamidi, Venkata Rajesh Sanjib Mishra B Venkata Subba Reddy V K R Vipparti	Semi Blind Time Domain Equalization for MIMO-OFDM Systems VHDL implementation of reed-solomon coding FGPA Implementation of Low-Complexity ICA Based Blind Multiple-Input-Multiple-Output OFDM Receivers Design of zigbee transceiver for IEEE 802.15.4 using matlab/simulink
2008	
C. Chandra Mohan B.Balaji Naik Mohammad Naseem Prasanta Kumar Pradhan	FFT and FIR Filter implementations in the DSL MODEMS Performance of Turbo Coded OFDM in Wireless Application Use of Soft Computing Techniques for Transducer Problems Performance Evaluation of DS-CDMA Receivers Using Genetic Algorithm
2007	
T. Govinda Mutyala Rao Ramesh Naidu G G. Venkat Reddy	Effects of Fixed Point FFT Implementation on Wireless LAN MP3 Hardware Audio Decoder Performance Evaluation of Different DS-CDMA Receivers using Chaotic Sequences
2006	
Nishar Ahamed Gugudu Raghuveer Allamneni	Evaluation of Channel Coding in OFDM Systems Bacterial Foraging Based Channel Equalizers
2005	
Nihar Ranjan Panda	Development of Fuzzy receivers for GSM Applications
2004	
Sharmistha Panda	Development of Fuzzy based receivers for DS-CDMA communication Systems

REVIEWER OF JOURNALS PUBLISHED BY:

- 14.1 IEEE
- 14.2 IET
- 14.3 Taylor and Francis
- 14.4 National Academy of Science
- 14.5 IETE(Taylor and Francis)
- 14.6 Springer: Photonics and Network Communication

PUBLICATIONS

Book Published

1. Title: **Neighborhood Area Network for Smart Grids Implementing IEEE 802.15.4g**
Authors: **Nidhi, Sarat Kumar Patra and Bharat Gupta**
Publisher: **Scholars' Press (2017)**
ISBN-3330650060, 9783330650060
2. Title: **Interference Cancellation and Resource Allocation for Device-to-Device Communication**
Authors: **Chithra R, Sarat Kumar Patra and Rober Bestak**
Publisher: **Scholars' Press (May 16, 2017)**
ISBN-10: 3330652314/ ISBN-13: 978-3-330-65231-6

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3. Title: **Use of RNS based Pseudo Noise Sequence: in DS-CDMA and 3G WCDMA**
Authors: **Chithra R and Sarat Kumar Patra**
Publisher: **LAP LAMBERT Academic Publishing (September 22, 2012)**
ISBN-10: **3659222372/ ISBN-13: 978-3659222375**

Publication in Book Chapter

1. *Handbook of Intelligent Computing and Optimization for Sustainable Development*, Edited by: Dr. Mukhdeep Singh Manshahia, Prof. Valeriy Kharchenko, Prof. Elias Munapo, Dr. J. Joshua Thomas and Dr. Pandian Vasant
Chapter Contributed: Application of Machine Learning Framework to Next Generation Wireless Networks: Challenges and Case Studies, By: Satyendra Singh Yadav, Shrishail Hiremath, Pravalika Suriseti, Vijay Kumar and **Sarat Kumar Patra**, Accepted for Publication, WILEY- SCRIVENER Publishing, Beverly, MA, USA-2021.
DOI: <http://www.scrivenerpublishing.com/cart/title.php?id=654>
2. *Metaheuristics in Machine Learning: Theory and Applications*, Edited by: Oliva D., Houssein E.H., Hinojosa S.
Chapter Contributed: Feature Engineering for Machine Learning and Deep Learning Assisted Wireless Communication, By: Vijay Kumar and **Sarat Kumar Patra**, Studies in Computational Intelligence, vol 967. Springer, Cham. 2021.
DOI: https://doi.org/10.1007/978-3-030-70542-8_4
3. *New Paradigms in Computational Modeling and Its Applications*, Edited by: Snehashish Chakraverty
Chapter Contributed: A user independent hand gesture recognition system using deep CNN feature fusion and machine learning technique, By: Jaya Prakash Sahoo, Samit Ari and **Sarat Kumar Patra**, pages 189–207, Elsevier, 2021.
DOI: <https://doi.org/10.1016/B978-0-12-822133-4.00011-6>
4. *Handbook of Research on Advanced Wireless Sensor Network Applications, Protocols, and Architectures*, Edited by: Niranjana K. Ray and Ashok Kumar Turuk
Chapter Contributed: Performance Evaluation of Quality of Service in IEEE 802.15.4-Based Wireless Sensor Networks, By: Sanatan Mohanty and **Sarat Kumar Patra**, pages 213-248, IGI Global, USA 2016.
5. *White Space Communication*, Edited by: Amit Kumar Mishra and David Llyod Johnson
Chapter Contributed: Engineering review of IEEE 802.22 standard on Cognitive Radio, By: Shrishail Hiremath, Amit Kumar Mishra and **Sarat Kumar Patra**, Springer, USA 2015.

Publication in Journals

1. Swati Rai, Jignesh S. Bhatt, and **Sarat Kumar Patra**. Augmented Noise Learning Framework for Enhancing Medical Image Denoising. *IEEE Access*, 9:117153–117168, 2021
2. Mandar Jatkar, Kamal K Jha, and **Sarat Kumar Patra**. First-principles investigation of F-functionalized ZGNR/AGNR for nanoscale interconnect applications. *Journal of Computational Electronics*, pages 1–10, 2021
3. Mandar Jatkar, Kamal K Jha, and **Sarat Kumar Patra**. Fe-functionalized zigzag GaN nanoribbon for nanoscale spintronic/interconnect applications. *Applied Physics A*, 127(6):1–10, 2021
4. Varun Kumar, **Sarat Kumar Patra**, and Poonam Singh. Mean-based reciprocity calibration in TDD massive MIMO system. *IET Communications*, 14(22):4038–4047, 2021
5. Byomakesh Mahapatra, Ashok Kumar Turuk, Sanket Kumar Panda, and **Sarat Kumar Patra**. Utilization-aware VB migration strategy for inter-BBU load balancing in 5G cloud radio access networks. *Computer Networks*, 181:107507, 2020
6. S. Behura, S. Kedia, S. M. Hiremath, and **Sarat Kumar Patra**. WiST ID -Deep Learning-Based Large Scale Wireless Standard Technology Identification. *IEEE Transactions on Cognitive Communications and Networking*, pages 1–1, 2020

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7. Varun Kumar, **Sarat Kumar Patra**, and Poonam Singh. Massive MIMO in cooperative network with multiple relay under imperfect CSI. *International Journal of Electronics Letters*, pages 1–12, 2020
 8. Byomakesh Mahapatra, A K Turuk, and **Sarat Kumar Patra**. Exploring Power Consumption Reduction in Centralized Radio Access for Energy-Efficient C-IoT Implementation. *Transactions on Emerging Telecommunications Technologies*, Wiley(10.1002/ett.4045):1–13, 2020
 9. Byomakesh Mahapatra, R Kumar, AK Turuk, and **Sarat Kumar Patra**. CLB: a multilevel co-operative load balancing algorithm for C-RAN architecture. *Digital Communications and Networks*, 5(4):308–316, 2019
 10. Paulo Alexandre Crisóstomo Lopes, Satyendra Singh Yadav, Aleksandar Ilic, and **Sarat Kumar Patra**. Fast Block Distributed CUDA Implementation of the Hungarian Algorithm. *Journal of Parallel and Distributed Computing*, 130:50–62, 2019
 11. Satyendra Singh Yadav, Paulo Alexandre Crisóstomo Lopes, Aleksandar Ilic, and **Sarat Kumar Patra**. Hungarian algorithm for subcarrier assignment problem using GPU and CUDA. *International Journal of Communication Systems*, 32(4):e3884, 2019
 12. Mangal Singh and **Sarat Kumar Patra**. On the PTS optimization using the firefly algorithm for papr reduction in ofdm systems. *IETE Technical Review*, 35(5):441–455, 2018
 13. Satyendra Singh Yadav, Paulo Alexandre Crisóstomo Lopes, and **Sarat Kumar Patra**. Parallel resource allocation and subcarrier assignment for downlink OFDMA. *IETE Technical Review*, pages 1–16, 2018
 14. R Chithra, Robert Bestak, and **Sarat Kumar Patra**. Efficient resource allocation for network-assisted multi-link device-to-device communication. *International Journal of Communication Systems*, 30(7):e3169, 2017
 15. Subrata Maiti, **Sarat Kumar Patra**, and Amitabha Bhattacharya. A modified plane wave model for fast and accurate characterization of layered media. *IEEE Transactions on Microwave Theory and Techniques*, 65(9):3492–3502, 2017
 16. Umakanta Nanda, Debiprasad Priyabrata Acharya, and **Sarat Kumar Patra**. Design of an efficient phase frequency detector to reduce blind zone in a PLL. *Microsystem Technologies*, 23(3):533–539, 2017
 17. Mangal Singh and **Sarat Kumar Patra**. Partial transmit sequence optimization using improved harmony search algorithm for PAPR reduction in OFDM. *ETRI Journal*, 39(6):782–793, 2017
 18. Rabindra Bhojray, R Das, and **Sarat Kumar Patra**. Cognitive Radio: An Intellectual Network for Future Wireless Communication Systems. *International Journal of Computer Networks and Wireless Communications*, 6(4):38–45, 2016
 19. R Chithra, Robert Bestak, and **Sarat Kumar Patra**. An interference cancellation scheme for D2D multi-link communication underlying cellular network. *Annals of Telecommunications*, 71(1-2):47–60, 2016
 20. SK Das, AK Samantray, and **SK Patra**. Hybrid crosstalk aware Q-factor analysis for selection of optical virtual private network connection. *International Journal of Electronics*, 103(1):113–129, 2016
 21. Bhaskara Rao Jammu, Pushpak Pati, **SK Patra**, and KK Mahapatra. Fpga implementation of rule optimization for stand-alone tunable fuzzy logic controller using GA. *Complex & Intelligent Systems*, 2(2):83–98, 2016
 22. Pallab Maji, **Sarat Kumar Patra**, and Kamalakanta Mahapatra. Design of real-time reconfigurable fuzzy logic controller with M-FRHC rule reduction technique. *Journal of intelligent & fuzzy systems*, 30(4):1973–1986, 2016
 23. Mangal Singh and **Sarat Kumar Patra**. Partial transmit sequence based cuckoo search optimization for peak-to-average power ratio reduction in orthogonal frequency division multiplexing systems. *Journal of Computational Intelligence and Electronic Systems*, 5(1):28–34, 2016

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24. Subrata Maiti, **Sarat Kumar Patra**, and Amitabha Bhattacharya. GPR modeling for rapid characterization of layered media. *Progress In Electromagnetics Research B*, 63:217–232, 2015
 25. Pallab Maji, **Sarat Kumar Patra**, and Kamalakanta Mahapatra. Design and implementation of fuzzy approximation PI controller for automatic cruise control system. *Advances in Artificial Intelligence*, 2015:1–7, 2015
 26. Madhusmita Mishra, **Sarat Kumar Patra**, and Ashok Kumar Turuk. Modified gamma-gamma turbulence model using numerical integration methods. *International Journal of Optics and Applications*, 5(3):71–81, 2015
 27. Madhusmita Mishra, **Sarat Kumar Patra**, and Ashok Kumar Turuk. Re-jagged AR4JA LDPC codes and their applications. *Applied Optics*, 54(12):3666–3671, 2015
 28. Jyoti P Patra, Prasanta Kumar Pradhan, Poonam Singh, and **Sarat Kumar Patra**. Joint channel estimation and CCI cancellation for STBC-OFDM system in time varying multipath fading channel. *Journal of Microwaves, Optoelectronics and Electromagnetic Applications (JMoe)*, 14:228–239, 2015
 29. Umakanta Nanda, Debiprasad Priyabrata Acharya, and **Sarat Kumar Patra**. Low noise and fast locking phase locked loop using a variable delay element in the phase frequency detector. *Journal of Low Power Electronics*, 10(1):53–57, 2014
 30. Umakanta Nanda, Debiprasad Priyabrata Acharya, and **Sarat Kumar Patra**. A new transmission gate cascode current mirror charge pump for fast locking low noise PLL. *Circuits, Systems, and Signal Processing*, 33(9):2709–2718, 2014
 31. Amitav Panda, **Sarat Kumar Patra**, and DP Acharya. SINR and cost based vertical handoff scheme for K-tier heterogeneous wireless network. *International Journal of Computer Applications*, 108(1), 2014
 32. Abhishek Kumar, Madhusmita Mishra, and **Sarat Kumar Patra**. Performance evaluation and complexity analysis of re-jagged AR4JA code over AWGN channel. *International Journal of Scientific & Engineering Research*, 4(6):2359–2362, 2013
 33. Madhusmita Mishra, **Sarat Kumar Patra**, and AK Turuk. Performance comparison of power efficient LDPC coded OFDM. *International journal of data modeling and knowledge management*, 3(1):7–14, 2013
 34. S Natarajamani, Santanu Kumar Behera, and **Sarat Kumar Patra**. A compact planar diversity antenna for ultra-wideband application with band-notched function. *Microwave and Optical Technology Letters*, 55(4):758–762, 2013
 35. S Natarajamani, Santanu Kumar Behera, and **Sarat Kumar Patra**. Planar ultrawideband fractal antenna with 3.4/5.5 ghz dual band-notched characteristics. *International Journal of Signal and Imaging Systems Engineering*, 6(1):46–51, 2013
 36. S Natarajamani, Santanu Kumar Behera, and **Sarat Kumar Patra**. A triple band-notched planar antenna for UWB applications. *Journal of Electromagnetic Waves and Applications*, 27(9):1178–1186, 2013
 37. Goutam Kumar Sahoo, Samit Ari, and **Sarat Kumar Patra**. ECG signal analysis for detection of Heart Rate and Ischemic Episodes. *International Journal of Advanced Computer Research*, 3(1):148, 2013
 38. Arun Agarwal and **Sarat Kumar Patra**. Performance prediction of Eureka-147 DAB system using interleaving and different coding rates. *Advanced Materials Research*, 403:4119–4125, 2012
 39. Arun Agarwal and **SK Patra**. Performance analysis of OFDM based DAB systems using concatenated coding technique. *Advanced Materials Research*, 403:105–113, 2012
 40. Santos Kumar Das and **Sarat Kumar Patra**. Optical power aware quality analysis for the selection of optimal OVPN connection over WDM network. *IETE Technical Review*, 29(6):492–498, 2012
 41. Santos Kumar Das and **Sarat Kumar Patra**. Physical layer impairments aware OVPN connection selection mechanisms. *International Journal of Computer and Electrical Engineering*, 4(3):331–335, 2012

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42. Santos Kumar Das and **Sarat Kumar Patra**. Qos aware optical virtual private network (OVPN) analytical control plane mechanism. *International Journal of Computer and Electrical Engineering*, 4(3):336–340, 2012
 43. Santos Kumar Das, VV Dhanya, and **Sarat Kumar Patra**. Qos based OVPN connection set up and performance analysis. *WSEAS transaction on Communication*, (8):275–286, 2012
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107. Prasanna Kumar Sahu, **Sarat Kumar Patra**, and SP Panigrahi. Non-linear channel equalization using computationally efficient neuro-fuzzy channel equalizer. In *IEEE International Conference on Personal Wireless Communications*, pages 16–19. IEEE, 2002
 108. **Sarat Kumar Patra**, Bernard Mulgrew, and Peter M Grant. Subset centre selection with fuzzy implemented radial basis function equaliser design. In *International symposium on Communication systems & digital signal processing*, pages 20–23, 1998
 109. **Sarat Kumar Patra** and Bernard Mulgrew. Co-channel interference suppression using a fuzzy filter. In *9th European Signal Processing Conference (EUSIPCO 1998)*, pages 1–4. IEEE, 1998
 110. **Sarat Kumar Patra** and Bernard Mulgrew. Computational aspects of adaptive radial basis function equalizer design. In *Proceedings of IEEE, International Symposium on Circuits and Systems (ISCAS'97)*, volume 1, pages 521–524. IEEE, 1997
 111. G Panda, JK Satpathy, and **Sarat Kumar Patra**. A Highly Efficient Adaptive Channel Equaliser Using Single Layer Architecture. In *IEEE International Workshop on Intelligent Signal Processing and Communication Systems*, pages 299–312. IEEE, March 19–21 1992

FOREIGN TRAVEL UNDERTAKEN RELATED TO ACADEMIC, RESEARCH AND OUTREACH ACTIVITIES

1. **Uppsala University, Sweden** (1st March to 31st March 2017): Faculty visit under Erasmus Mundus project Namaste (faculty/ staff visit).
2. **Boston, USA** (1-3 Dec, 2014): Paper presentation at 8th International Conference on Bio-inspired Information and Communications Technologies (**BICT 2014**).
3. **University of Capetown, South Africa** (June, 2013): Collaboration visit at Electrical Engineering Department.
4. **Quest University, Ipoh, Malaysia** (Jan, 2013): Visit as academic advisor cum question moderator.
5. **Copenhagen** (11-12 Jun 2012): Paper presentation at conference of World Academy of Science, Engineering and Technology (**WASET 2012**)
6. **Singapore** (22-24 Jan 2009): Paper presentation at Conference International Conference on Advanced Computer Control (**ICACC 2009**).
7. **Changsha, China** (14-15 Dec 2010): General chair for 2010 6th International Conference on MEMS NANO, and Smart Systems (**ICMENS 2010**)
8. **Dubai (28-29 Dec 2009)**: Paper presentation at International Conference International Conference on MEMS NANO, and Smart Systems (**ICMENS 2009**).
9. **University of Auckland, New Zealand** (June-July, 2006): Visit to Electrical Engineering Department on collaboration activity.
10. **University of Edinburgh, UK** (October 1995-October 1998): PhD studies with Commonwealth Scholarship

OTHER ACADEMIC OUTREACH ACTIVITIES

1. Competency in use of software for education technology with ICT.
 - Completion of online course as Principal Developer for “Mobile Communication” under pedagogy project of MHRD with IIT Kharagpur as the Anchor Institution.
 - Course website: http://www.ide.iitkgp.ernet.in/Pedagogy1/pedagogy_main.jsp
2. Use of Moodle software for online distribution of class notes, student information and assignment management for all courses taught in the last 5 years. Courses hosted on moodle server in NIT Rourkela Campus.
3. Use of Android moodle app for moodle interface.
4. Basic use of scalable learning software for implementing Flipped Classroom. Expect to start first course form July 2017.

POPULAR TECHNICAL TALKS DELIVERED (RECENTLY)

1. **Introduction to Data Science and Big Data Analytics**; AICTE sponsored ATAL-5 Day FDP on "Data Analytics in R" , IIIT Vadodara, Gujarat, India; **Dec. 14-18, 2020.**
2. **Introduction to Artificial Intelligence**; AICTE sponsored ATAL-5 Day FDP , NIT Meghalaya, Meghalaya, India; **Nov. 01, 2020.**
3. **Machine Learning for Wireless Communication**; TEQIP-III sponsored 5 Day online workshop, NIT Meghalaya, Meghalaya, India; **Sep. 15, 2020.**
4. **Introduction to Data Science and Big Data Analytics**; AICTE sponsored ATAL-5 Day FDP on Data Analytics in R , IIIT Vadodara, Gujarat, India; **May 25, 2020.**
5. **Artificial Intelligence- An Introduction**; AICTE sponsored ATAL- 5 Day FDP on Artificial Intelligence , IIIT Vadodara, Gujarat, India; **May 11, 2020.**
6. **Keynote Speaker: Machine Learning for Intelligent Wireless Systems**; International Conference on Electronic Systems and Intelligent Computing (ESIC-2020), NIT Arunachal Pradesh, India; **March 04, 2020.**
7. **Wireless Communication from 1G to 5G & Beyond**; TEQUIP-III sponsored Short term course on " Modern Wireless Communication: Towards 5G, NIT Rourkela, Odisha; **September 25, 2019.**
8. **Modern Communication from Analog to 5G and beyond**; Expert Lecture at Institute of Technology, Nirma University, Ahmadabad Gujarat; **March 1, 2019.**
9. **Digital Technologies applications and future trends**; keynote address in AICON-2017, CSIT Durg; **June 21, 2017.**
10. **Fuzzy Systems and applications**, QIP short term course on advances in VLSI Tech and Signal processing at VSSUT, Burla (Odisha); **April 8, 2017.**
11. **Wireless communication 1G to 5G**, Computer Society of India, Rourkela; **Dec 16, 2016.**
12. **Cognitive Radio, an Introduction**, in QIP short-term course, VSSUT, Burla; **Jan 7, 2017.**
13. **Satellite Communication systems and networking**, CEP course at Intergrated Test Range, DRDO, Chandipur, Jul 25, 2016.
14. **Green Communication**, AICON, CSIT, Durg; **April 21, 2016.**
15. **D2D Communication**, National Seminar on Communication, Control and Instrumentation, GIET, Gunupur, Odisha; **Nov 6, 2015**
16. **E-Learning for the schools**, Workshop for Railway school teachers, Chakradharpur, Jharkhand; **May 12, 2015.**
17. **Library as a service in digital Engineering**, Short term course for Academic staff, Sambalpur University; **Feb 14, 2015**
18. **Soft computing approaches for filtering and estimation**, Short term course on Estimation and Filtering with Application, Department of Electrical Engineering, NIT Rourkela; **Feb 21, 2015.**