Chandra Ramabhadra Murthy

CONTACT INFORMATION

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CURRENT SPONSORED PROJECTS

- Qualcomm 6G University Research Grant (Qualcomm)
- Indian Open Source Software Platform for and End-to-end 5G Network (IoS-5GN) (MeitY, Govt. of India)
- Encoding and decoding of sensory information across scales and areas (Pratiksha Trust)
- Topics in Scheduling for QoS in 5G-NR Cellular Networks (Centre for Networked Intelligence)

PAST PROJECTS

- Benchmarking and Improving the Energy Efficiency of 5G via an ORAN-based Open-Source Software Stack (BT-IRC)
- New Waveforms for Beyond 5G Communications (Nokia)
- Building an O-RAN based RU-DU split 7.2x architecture using the OAI codebase (BT-IRC)
- MeitY Young Faculty Research Fellowship (MeitY, Govt. of India)
- Operation and maintenance of the end-to-end 5G testbed (DoT, Govt. of India)
- Next Gen. Wireless Research and Standardization: 5G and Beyond (MeitY, Govt. of India)
- Implementing the Open-source 5G NR RRH for O-RAN (Telecom Centre of Excellence, IISc)
- Building an end-to-end 5G testbed (DoT, Govt. of India)
- 5G Research and Building Next Gen. Solutions for the Indian Market (MeitY, Govt. of India)
- Sparse array signal processing (DRDO, Govt. of India)
- D2D Communications for LTE-Advanced Cellular Networks (DST, Govt. of India)
- Distributed Bayesian learning for big data with application to 4G wireless networks (MeitY, Govt. of India)
- Green wireless sensor networks (Boeing/ANRC)
- Cognitive radio design in interference limited environments (Boeing/ANRC)
- India-UK advanced technology centre (IU-ATC-Phase 2) of excellence in next generation networked systems and services (Govt. of India)
- Channel estimation and feedback in MIMO communication systems (Govt. of India)
- Wireless system design for deploying energy harvesting sensors in an airplane (Boeing/ANRC)
- Fundamental physical layer aspects of cognitive radio for onboard communications (Boeing/ANRC)
- Cognitive radio for rural broadband wireless access (DST, Govt. of India; Microsoft Research India)
- Applications of compressive sensing in signal processing and communications (DRDO-IISc Program on Mathematical Engineering)
- Spectrum sensing, management and resource allocation for cognitive radio (DRDO)

EDUCATION

University of California, San Diego, U.S.A.

Ph.D., Electrical and Computer Engineering, August 2006

- Dissertation: "Feedback-based Communication with Multiple Antennas"
- Advisor: Prof. Bhaskar D. Rao

Stanford University, U.S.A.

Graduate coursework through the Stanford Center for Professional Development. August 2002

Purdue University, U.S.A.

M.S., Electrical and Computer Engineering, August 2000

Indian Institute of Technology Madras, Chennai, India

B.Tech., Electrical Engineering, August 1998

Professional Experience

Indian Institute of Science, Bangalore

Professor **July 2018 - Present**
Associate Professor **September 2013 - July 2018**
Assistant Professor **September 2007 - September 2013**

Beceem Communications, Inc., Bangalore

Staff Design Engineer **September 2006 - September 2007**

University of California, San Diego Electrical and Computer Engineering Department

Graduate Research Assistant **September 2002 - August 2006**

Qualcomm, Inc. WCDMA baseband system design

Systems Engineer **August 2000 - August 2002**

Purdue University Spread Spectrum and Satellite Communications Research Laboratory (S3CRL)

Graduate Research Assistantship **January 1999 - August 2000**

Research Interests

Digital signal processing, information theory, estimation theory, stochastic optimization, and their applications in the optimization of MIMO, OFDM and CDMA wireless communication systems.

Honors and Awards

- 2026 **Nokia Chair Professorship** at the Dept. of ECE, Indian Institute of Science, India.
- 2025 Received the **Pandit Deendayal Upadhyaya Telecom Excellence Award-2024** for outstanding contributions in Telecom Innovation & Research.
- 2023 Received the **Qualcomm 6G University Research Grant**.
- 2023 Delivered the Institute colloquium at the Faculty Hall, IISc on 06 Sep. 2023.
- 2023 Elected as a **Fellow** of the **Indian National Academy of Engineering.**
- 2023 Best paper award for the paper: S. Krishnan, V. B. Sukumaran, and C. R. Murthy, "On the Optimal Tradeoff of Age of Information and Transmission Power for Point-To-Point Links," *National Conference on Communications,* IIT Guwahati, India, Feb. 2023.
- 2023 Elevated to **IEEE Fellow**, class of 2023.
- 2022 My student Arunkumar K. P. won the best student paper award for the paper: Arunkumar K. P., Chandra R. Murthy, and P. Muralikrishna, "Variable Bandwidth Multicarrier Communications: A New Waveform for the Delay-Scale Channel," 23rd IEEE International Workshop on Signal Processing Advances in Wireless Communications (SPAWC), Oulu, Finland, July 2022.
- 2022 Our implementation and demonstration of cell-free MIMO won the **top 30** award, out of nearly 1,500 submissions, in the 5G Hackathon organized by the Department of Telecommunications, Govt. of India.
- 2021 My student Lekshmi Ramesh won the won the IEEE Jack Keil Wolf ISIT Student Paper Award for the paper: Lekshmi Ramesh, Chandra R. Murthy, Himanshu Tyagi, "Multiple Support Recovery Using Very Few Measurements Per Sample," IEEE International Symposium on Information Theory, Melbourne, Australia, July 2021.
- 2022, 2021 Won the Qualcomm innovation fellowship for the proposal titled "Intelligent Reflecting Surface Assisted Opportunistic Multi-user Communication" (with my student Yashvanth L.) Won the award again in 2022 under the "super-winner" category.
- 2020 My student Geethu Joseph won the best doctoral dissertation award at the International Conference on Signal Processing and Communications 2020 and the Kaikini Award for the best doctoral dissertation from the ECE department, IISc (only one student gets this award each year.)

- 2020 Senior Area Editor for the IEEE TRANSACTIONS ON SIGNAL PROCESSING.
- 2019 Won the Qualcomm innovation fellowship for the proposal titled "Random access schemes for massive machine-type communications" (with my student Chirag Ramesh)
- 2019 Associate Editor for the IEEE TRANSACTIONS ON INFORMATION THEORY.
- 2018 Received the **Satish Dhawan State Award for Excellence in Engineering Research.**
- 2018 My student Lekshmi Ramesh won the best student paper award at ICASSP 2018.
- 2017 Received the **Sir Visvesvaraya Young Faculty Research Fellowship,** Ministry of Electronics and Information Technology, Govt. of India. Renewed for 3 years in 2019.
- 2017 Editor for the IEEE TRANSACTIONS ON COMMUNICATIONS.
- 2016 Associate Editor for the IEEE TRANSACTIONS ON SIGNAL PROCESSING.
- 2014 Elected member of the IEEE Signal Processing Society's Technical Committee on Signal Processing and Communications. Re-elected for 3 years in 2016.
- 2014 My student Ranjitha Prasad's PhD thesis won the Kaikini Award for best doctoral dissertation from the ECE department, IISc Bangalore.
- 2014 Won the best paper award: R. Prasad and C. R. Murthy, "Joint Approximately Group Sparse Channel Estimation and Data Detection in MIMO-OFDM Systems Using Sparse Bayesian Learning," *Proc. National Conference on Communications (NCC),* IIT Kanpur, Feb. 2014
- 2012 Associate editor, IEEE SIGNAL PROCESSING LETTERS, for the years 2012-2015
- 2013, 2012 Recognized as an **exemplary reviewer** for the IEEE COMMUNICATION LETTERS
- 2006 Finalist in the Student Paper Contest, for the paper entitled "High-Rate Analysis of Vector Quantization for Noisy Channels" in the International Conference on Acoustics, Speech and Signal Processing (ICASSP), held May 14th - 19th at Toulouse, France.
- 2002-2003 Graduate Student Fellowship. University of California, San Diego.
- 1997 Recipient of the Rajiv Gandhi Research Fellowship, DST, Government of India.
- 1994 Ranked 243 (top 0.025%) in the IIT Joint Entrance Examination.
- 1992 Recipient of the National Talent Search Scholarship (NTSE) for Mathematics and Science.

PROFESSIONAL ACTIVITIES

- IEEE Fellow, Member No. 80631404, IEEE SP Society, IEEE Comsoc, IEEE IT Society
- Elected member, IEEE Signal Processing Society Technical Committee on Sensor Array and Multichannel Signal Processing
- Editorships: IEEE SIGNAL PROCESSING LETTERS IEEE TRANSACTIONS ON COMMUNICATIONS, IEEE TRANSACTIONS ON SIGNAL PROCESSING, IEEE TRANSACTIONS ON INFORMATION THEORY, SADHANA
- Elected member, IEEE Signal Processing Society Technical Committee on Signal Processing and Communications, 2014–2016, reelected for the term 2017–2019
- Chapter Chair, IEEE Signal Processing Society, Bangalore Chapter, 2014–2016
- Reviewer: IEEE Transactions on: Signal Processing, Wireless Communications, Communications, Information Theory, Networking. Also on the TPC of several IEEE conferences.
- Conference/Workshop Organization: NCC 2018, 2010, 2011, 2013, SPCOM 2010, 2012, 2014 (TPC Co-Chair) IWEHC 2012, 2013 (workshop in conjunction with ICC 2012) (TPC Co-Chair), JTG summer school 2016 (General Chair)
- TPC Member: Globecom, ICC, VTC, ICASSP, SPAWC, ISIT (several years), WiOpt 2013

SERVICE TO IISC

- Convenor, OCCaP
- Member, Institute Innovation Council, IISc
- DCC Chair, ECE department
- PCC member, M. Tech. (SP)
- Website committee, ECE department
- Organized multiple editions of SPCOM and NCC at IISc

COMPUTER SKILLS

- Languages: C, C++, Python, Matlab

BOOKS

1. L. Yashvanth, P. Vishwanathan, and C. R. Murthy, "Understanding 5G New Radio: An Experimental Approach", Springer Nature, 2026.
2. G. Joseph and C. R. Murthy, "Sparsity-Constrained Linear Dynamical Systems," Springer Tracts in Electrical and Electronics Engineering (STEEE), 2024.

BOOK CHAPTERS

1. L. Yashvanth and C. R. Murthy, "MIMO Communications and Signal Processing: A Reconfigurable Intelligent Surface Perspective," Handbook of Statistics, Volume 54 – Multidimensional Signal Processing, Elsevier, 2026.
2. G. Joseph, S. Khanna, C. R. Murthy, R. Prasad, S. S. Thoota, "Sparsity-aware Bayesian inference and its applications," Handbook of Statistics, Elsevier, 2022.
3. N. B. Mehta and C. R. Murthy, "Joint PHY-MAC optimization for green radio communications," in "Green Radio Communication Networks," Ekram Hossain and Vijay K. Bharghava (Eds.), Cambridge University Press, 2012.

JOURNAL PUBLICATIONS

1. R. K. Chakraborty, G. Joseph, and C. R. Murthy, "State and Sparse Input Estimation in Linear Dynamical Systems using Low-Dimensional Measurements," Open Journal of Control Systems (OJ-CSYS), Accepted, Oct. 2025.
2. N. Halder and C. R. Murthy, "Channel Estimation and Data Detection in DS-Spread Channels: A Unified Framework, Novel Algorithms, and Waveform Comparison," *IEEE Transactions on Signal Processing*, vol. 73, pp. 4108 - 4123, Accepted Sep. 2025.
3. L. Yashvanth, C. R. Murthy, and B. D. Rao, "Mitigating Spatial-Wideband and Beam-Split Effects via Distributed IRSs: Design and Analysis," *IEEE Transactions on Signal Processing*, vol. 73, pp. 3286 - 3301, Accepted Jul. 2025.
4. L. Yashvanth, C. R. Murthy, and B. D. Rao, "Spatial Correlation-Aware Opportunistic Beamforming in IRS-Aided Multi-User Systems," *IEEE Wireless Communications Letters,* vol. 14, no. 10, pp. 3174 - 3178, Oct. 2025.
5. S. Ghosh, L. Yashvanth, and C. R. Murthy, "Performance Analysis of Multi-IRS Aided Multiple Operator Systems at mmWave Frequencies," *IEEE Transactions on Communications,* vol. 73, no. 11, pp. 12727 - 12743, Nov. 2025.
6. A. Anand, C. R. Murthy, and S. Ray, "Burst Estimation through Atomic Decomposition (BEAD): A Toolbox to find Oscillatory Bursts in Brain Signals," *Imaging Neuroscience*, Jul. 2025. DOI: https://doi.org/10.1162/IMAG.a.86
7. G. Joseph, V. Gandikota, A. Bhandari, J. Choi, I. Kim, G. Lee, M. Matthaiou, C. R. Murthy, H. Q. Ngo, P. K. Varshney, T. Wimalajeewa, W. Yi, Y. Yuan, G. Zhang, "Low-Resolution Compressed Sensing and Beyond for Communications and Sensing: Trends and Opportunities," Elsevier Signal Processing, vol. 235, Oct. 2025.
8. Sameera Bharadwaja H. and C. R. Murthy, "A Probably Approximately Correct Analysis of Group Testing Algorithms," *IEEE Transactions on Information Theory*, vol. 71, no. 6, pp. 4872 - 4894, Jun. 2025
9. P. Kumar, G. Joseph, C. R. Murthy, and R. Padhi, "Comprehensive MPSP for Fast Optimal Control: Algorithm Development and Convergence Analysis," *Transactions of the Indian National Academy of Engineering*, Springer Nature, vol. 10, pp. 33-52, Dec. 2024.
10. L. Yashvanth and C. R. Murthy, "Distributed IRSs Always Benefit Every Mobile Operator," IEEE Wireless Communications Letters, vol. 13, no. 11, pp. 2975 - 2979, Nov. 2024.
11. L. Yashvanth and C. R. Murthy, "On the Impact of an IRS on the Out-of-Band Performance in Sub-6 GHz & mmWave Frequencies," *IEEE Transactions on Communications*, vol. 72, no. 12, pp. 7417-7434, Dec. 2024.

12. R. Chopra, C. R. Murthy, and K. Appaiah, "Adaptive Data-Aided Time-Varying Channel Tracking for Massive MIMO Systems," *IEEE Transactions on Communications*, vol. 72, no. 9, pp. 5458-5472, Sep. 2024.
13. A. Chowdhury and C. R. Murthy, "Half-Duplex APs with Dynamic TDD vs. Full-Duplex APs in Cell-Free Systems," *IEEE Transactions on Communications*, vol. 72, no. 7, pp. 3856-3872, Jul. 2024.
14. A. Anand, C. R. Murthy, and R. Chopra, "Impact of Mobility on the Downlink Performance of Cell-Free Massive MIMO Systems," *Physical Communication,* vol. 61, Dec. 2023.
15. L. Yashvanth and C. R. Murthy, "Performance Analysis of Intelligent Reflecting Surface Assisted Opportunistic Communications," Accepted, *IEEE Transactions on Signal Processing,* vol. 72, pp. 2056-2070, Mar. 2023.
16. A. Chowdhury and C. R. Murthy, "On the Sum Spectral Efficiency of Dynamic TDD Enabled Cell-Free Massive MIMO Systems," *IEEE Wireless Communications Letters,* vol. 12, no. 3, pp. 481-485, Mar. 2023.
17. S. Shiv, S. Bhashyam, C. R. Srivatsa and C. R. Murthy, "Learning-based Sparse Recovery for Joint Activity Detection and Channel Estimation in Massive Random Access Systems," Accepted, *IEEE Wireless Communications Letters*, Aug. 2022.
18. C. Sriram, G. Joseph, and C. R. Murthy, "Stabilizability of Linear Dynamical Systems Using Sparse Control Inputs," Accepted, *IEEE Transactions on Automatic Control,* Oct. 2022.
19. S. Saha, H. S. Makkar, Vineeth B. S. and C. R. Murthy, "On the Relationship Between Mean Absolute Error and Age of Incorrect Information in the Estimation of a Piecewise Linear Signal over Noisy Channels," *IEEE Communications Letters*, vol. 26, no. 11, pp. 2576-2580, Nov. 2022.
20. Sameera Bharadwaja H. and C. R. Murthy, "Recovery Algorithms for Pooled RT-qPCR based Covid-19 Screening," *IEEE Transactions on Signal Processing*, vol. 70, pp. 4353-4368, Accepted Jul. 2022.
21. C. R. Srivatsa and C. R. Murthy, "On the Impact of Channel Estimation on the Design and Analysis of IRSA based Systems," *IEEE Transactions on Signal Processing*, vol. 70, pp. 4186-4200, 2022.
22. C. R. Srivatsa and C. R. Murthy, "User Activity Detection for Irregular Repetition Slotted Aloha based MMTC," *IEEE Transactions on Signal Processing*, vol. 70, pp. 3616-3631, 2022.
23. A. Anand and C. R. Murthy, "Impact of Subcarrier Allocation and User Mobility on the Uplink Performance of Multi-User Massive MIMO-OFDM Systems," *IEEE Transactions on Communications*, vol. 70, no. 8, pp. 5285-5299, Aug. 2022.
24. S. Khanna and C. R. Murthy, "On the Support Recovery of Jointly Sparse Gaussian Sources Via Sparse Bayesian Learning," Accepted, *IEEE Transactions on Information Theory*, Jun. 2022.
25. Arunkumar K. P. and C. R. Murthy, "Orthogonal Delay Scale Space Modulation: A New Technique for Wideband Time-Varying Channels," *IEEE Transactions on Signal Processing*, vol. 70, pp. 2625-2638, Jun. 2022.
26. A. Chowdhury, R. Chopra, and C. R. Murthy, "Can Dynamic TDD Enabled Half-Duplex Cell-Free Massive MIMO Outperform Full-Duplex Cellular Massive MIMO?", *IEEE Transactions on Communications*, vol. 70, no. 7, pp. 4867-4883, Jul. 2022.
27. L. Ramesh, C. R. Murthy, and H. Tyagi, "Multiple Support Recovery Using Very Few Measurements Per Sample," *IEEE Transactions on Signal Processing*, vol. 70, pp. 2193-2206, May 2022.

28. S. S. Thoota and C. R. Murthy, "Massive MIMO-OFDM Systems with Low Resolution ADCs: Cramér-Rao Bound, Sparse Channel Estimation, and Soft Symbol Decoding," Accepted, *IEEE Transactions on Signal Processing,* Mar. 2022.
29. A. Chowdhury, P. Sasmal, C. R. Murthy, and R. Chopra, "On the Performance of Distributed Antenna Array Systems with Quasi-Orthogonal Pilots," Accepted, *IEEE Transactions on Vehicular Technology,* Jan. 2022.
30. L. Ramesh, C. R. Murthy, and H. Tyagi, "Sample-Measurement Tradeoff in Support Recovery under a Subgaussian Prior," *IEEE Transactions on Information Theory,* Vol. 67, No. 12, pp. 8140-8153, Dec. 2021.
31. S. S. Thoota, D. G. Marti, O. T. Demir, R. Mundlamuri, J. Palacios, C. M. Yetis, C. K. Thomas, S. H. Bharadwaja, E. Björnson, P. Giselsson, M. Kountouris, C. R. Murthy, N. González-Prelcic, J. Widmer, "Site-specific millimeter-wave compressive channel estimation algorithms with hybrid MIMO architectures," *ITU Journal on Future and Evolving Technologies (ITU J-FET) special issue on AI and machine learning solutions in 5G and future networks,* Volume 2 (2021), Issue 4, Jul. 2021.
32. R. Chopra and C. R. Murthy, "Data Aided MSE-Optimal Time Varying Channel Tracking in Massive MIMO Systems," *IEEE Transactions on Signal Processing,* vol. 69, pp. 4219-4233, Accepted Jun. 2021.
33. R. Chopra, C. R. Murthy, and A. Papazafeiropoulos, "Uplink Performance Analysis of Cell-Free mMIMO Systems under Channel Aging," *IEEE Communications Letters*, vol. 25, no. 7, pp. 2206-2210, Jul. 2021.
34. D. Prasanna and C. R. Murthy, "mmWave Channel Estimation via Compressive Covariance Estimation: Role of Sparsity and Intra-vector Correlation," Accepted, *IEEE Transactions on Signal Processing,* Mar. 2021.
35. P. Sasmal and C. R. Murthy, "Incoherence is Sufficient for Statistical RIP of Unit Norm Tight Frames: Constructions and Properties," *IEEE Transactions on Signal Processing,* vol. 69, pp. 2343-2355, Mar. 2021.
36. S. Saha, V. B. Sukumaran and C. R. Murthy, "On the Minimum Average Age of Information in IRSA for Grant-free mMTC," Accepted, *IEEE Journal on Selected Areas in Communications, Special Issue on Age of Information in Real-time Systems and Networks,* Feb. 2021.
37. S. S. Thoota and C. R. Murthy, "Variational Bayes' Joint Channel Estimation and Soft Symbol Decoding for Uplink Massive MIMO Systems with Low Resolution ADCs," *IEEE Transactions on Communications,* vol. 69, no. 5, pp. 3467-3481, May 2021.
38. G. Joseph and C. R. Murthy, "Controllability of Linear Dynamical Systems Under Input Sparsity Constraints," *IEEE Transactions on Automatic Control,* vol. 66, no. 2, pp. 924-931, Feb. 2021.
39. D. Prasanna, C. Sriram and C. R. Murthy, "On the Identifiability of Sparse Vectors from Modulo Compressed Sensing Measurements," *IEEE Signal Processing Letters,* vol. 28, pp. 131-134, Dec. 2020.
40. R. Chopra, C. R. Murthy, H. A. Suraweera, and E. G. Larsson, "Blind Channel Estimation for Downlink Massive MIMO Systems with Imperfect Channel Reciprocity," *IEEE Transactions on Signal Processing,* vol. 68, no. 1, pp. 3132-3145, 2020.
41. Arunkumar K. P. and C. R. Murthy, "Soft Symbol Decoding in Sweep-Spread-Carrier Underwater Acoustic Communications: A Novel Variational Bayesian Algorithm and its Analysis," *IEEE Transactions on Signal Processing,* vol. 68, no. 1, pp. 2435-2448, 2020.
42. R. V. Bhat, M. Motani, C. R. Murthy, and R. Vaze, "Energy Harvesting Communications with Batteries having Cycle Constraints," *IEEE Transactions on Green Communications and Networking,* vol. 4, no. 1, pp. 263-276, Mar. 2020.

43. R. Ramu Naidu and C. R. Murthy, "Construction of Unimodular Tight Frames Using Majorization-Minimization for Compressed Sensing," *Elsevier Signal Processing,* vol. 172, Jul. 2020.
44. G. Joseph and C. R. Murthy, "On the Convergence of a Bayesian Algorithm for Joint Dictionary Learning and Sparse Recovery," *IEEE Transactions on Signal Processing,* vol. 68, no. 1, pp. 343-358, Dec. 2020.
45. S. S. Thoota, P. Babu, and C. R. Murthy, "Codebook Based Precoding and Power Allocation for MU-MIMO Systems for Sum Rate Maximization," *IEEE Transactions on Communications,* vol. 67, no. 12, pp. 8290-8302, Dec. 2019.
46. D. Gündüz, P. de Kerret, N. D. Sidiropoulos, D. Gesbert, C. R. Murthy, and M. van der Schaar, "Machine Learning in the Air," *IEEE Journal on Selected Areas in Communications,* vol. 37, no. 10, pp. 2184-2199, Oct. 2019.
47. R. Chopra, C. R. Murthy, and R. Annavajjala, "Physical Layer Security in Wireless Sensor Networks Using Distributed Co-Phasing," *IEEE Transactions on Information Forensics and Security,* vol. 14, no. 10, pp. 2662-2675, Oct. 2019.
48. G. Joseph and C. R. Murthy, "Measurement Bounds for Observability of Linear Dynamical Systems under Sparsity Constraints," *IEEE Transactions on Signal Processing,* vol. 67, no. 8, pp. 1992-2006, Apr. 15, 2019.
49. M. Sharma, C. R. Murthy, and R. Vaze, "Asymptotically Optimal Uncoordinated Power Control Policies for Energy Harvesting Multiple Access Channels with Decoding Costs," *IEEE Transactions on Communications,* vol. 67, no. 3, pp. 2420-2435, Mar. 2019.
50. R. Chopra, C. R. Murthy, H. A. Suraweera, E. G. Larsson, "Analysis of Non-Orthogonal Training in Massive MIMO under Channel Aging with SIC Receivers," *IEEE Signal Processing Letters*, vol. 26, no. 2, pp. 282-286, Feb. 2019.
51. R. Chopra, C. R. Murthy, G. Rangarajan, "Statistical Tests for Detecting Granger Causality," *IEEE Transactions on Signal Processing*, vol. 66, no. 22, Nov. 15, 2018.
52. A. Sharma and C. R. Murthy, "On Finding a Subset of Non-Defective Items from a Large Population," *IEEE Transactions on Signal Processing*, vol. 66, no. 21, pp. 5762-5775, Nov. 01. 2018.
53. Arunkumar K. P. and C. R. Murthy, "Iterative Sparse Channel Estimation and Data Detection for Underwater Acoustic Communications Using Partial Interval Demodulation," *IEEE Transactions on Signal Processing*, vol. 66, no. 19, pp. 5041-5055, Oct. 01, 2018.
54. S. Khanna and C. R. Murthy, "Sparse Recovery from Multiple Measurement Vectors Using Exponentiated Gradient Updates," *IEEE Signal Processing Letters*, vol. 25, no. 10, pp. 1485-1489, Oct. 2018.
55. G. Joseph and C. R. Murthy, "On the Observability of a Linear System with a Sparse Initial State," *IEEE Signal Processing Letters*, vol. 25, no. 7, pp. 994-998, Jul. 2018.
56. M. Sharma and C. R. Murthy, "Distributed Power Control for Multi-hop Energy Harvesting Links with Retransmission," *IEEE Transactions on Wireless Communications*, vol. 17, no. 6, pp. 4064-4078, Jun. 2018.
57. S. Khanna and C. R. Murthy, "On the Restricted Isometry of the Columnwise Khatri-Rao Product," *IEEE Transactions on Signal Processing,* vol. 61, no. 5, pp. 1170–1183, Mar. 1, 2018.
58. R. Chopra, C. R. Murthy, H. A. Suraweera, and E. G. Larsson, "Performance Analysis of FDD Massive MIMO Systems under Channel Aging," *IEEE Transactions on Wireless Communications*, vol. 17, no. 2, pp. 1094-1108, Feb. 2018.
59. A. Sharma and C. R. Murthy, "Computationally Tractable Algorithms for Finding a Subset of Non-defective Items from a Large Population," *IEEE Transactions on Information Theory*, vol. 63, no. 11, pp. 7149 – 7165, Nov. 2017.

60. R. Chopra, R. Annavajjala, and C. R. Murthy, "Distributed Co-Phasing with Autonomous Constellation Selection," *IEEE Transactions on Signal Processing,* vol. 65, no. 21, pp. 5798–5811, Nov. 2017.
61. G. Joseph and C. R. Murthy, "A Non-iterative Online Bayesian Algorithm for the Recovery of Temporally Correlated Sparse Vectors," *IEEE Transactions on Signal Processing,* vol. 65, no. 20, pp. 5510–5525, Oct. 2017.
62. S. Khanna and C. R. Murthy, "Communication Efficient Decentralized Sparse Bayesian Learning of Joint Sparse Signals," *IEEE Transactions on Sig. and Inform. Process. over Networks*, vol. 3, no. 3, pp. 617-630, Sept. 2017.
63. A. K. Dutta, K. V. S. Hari, C. R. Murthy, N. B. Mehta, and L. Hanzo, "Minimum Error Probability MIMO-Aided Relaying: Multi-Hop, Parallel and Cognitive Designs," *IEEE Transactions on Veh. Technol.,* vol. 66, no. 6, pp. 5435-5440, Jun. 2017.
64. M. K. Sharma and C. R. Murthy, "On the Design of Dual Energy Harvesting Communication Links With Retransmission," *IEEE Transactions on Wireless Commun.*, vol. 16, no. 6, pp. 4079-4093, Jun. 2017.
65. P. Mohapatra, C. R. Murthy, and J. Lee, "On the Secrecy Capacity Region of the 2-user Symmetric Z Interference Channel with Unidirectional Transmitter Cooperation," *IEEE Transactions on Inform. Forensics and Security*, vol. 12, no. 3, pp. 572-587, Mar. 2017.
66. S. Khanna and C. R. Murthy, "Decentralized Joint-Sparse Signal Recovery: A Sparse Bayesian Learning Approach," *IEEE Transactions on Sig. and Inform. Process. over Networks*, vol. 3, no. 1, pp. 29-45, Mar. 2017.
67. R. Chopra, C. R. Murthy, and R. Annavajjala, "Multi-Stream Distributed Co-Phasing," *IEEE Transactions on Sig. Process.,* vol. 65, no. 4, pp. 1042-1057, Feb. 2017.
68. R. Ramu Naidu and C. R. Murthy, "Construction of Binary Sensing Matrices Using Extremal Set Theory," *IEEE Signal Processing Letters,* vol. 24, no. 2, pp. 211-215, Feb. 2017.
69. R. Vaze and C. R. Murthy, "Multiple Transmitter Localization and Whitespace Identification using Randomly Deployed Binary Sensors," *IEEE Transactions on Cognitive Commun. and Networking*, vol. 2, no. 4, pp. 1-12, Dec. 2016.
70. M. K. Sharma and C. R. Murthy, "Packet Drop Probability Analysis of Dual Energy Harvesting Links With Retransmission," *IEEE Journal on Selected Areas - Series on Green Communications and Networking*, vol. 34, no. 12, pp. 3646-3660, Dec. 2016.
71. R. Chopra, C. R. Murthy, and H. A. Suraweera, "On the Throughput of Large MIMO Beamforming Systems with Channel Aging," *IEEE Sig. Process. Letters*, vol. 23, no. 11, pp. 1523-1527, Nov. 2016.
72. P. Mohapatra and C. R. Murthy, "On the Capacity of the 2-User Interference Channel with Transmitter Cooperation and Secrecy Constraints," *IEEE Transactions on Inform. Theory*, vol. 62, no. 10, pp. 5664 - 5689, Oct. 2016.
73. Venugopalakrishna Y. R. and C. R. Murthy, "Performance Analysis of Co-phased Combining for Achieving Binary Consensus over Fading Wireless Channels with Imperfect CSI," *IEEE Transactions on Sig. Proc.*, vol. 64, no. 12, pp. 3262 - 3273, Jun. 2016.
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