

Conference Publications

(underline denotes current or past students)

1. M. Heidari, F. Shirani, and S. S. Pradhan, “On the Necessity of Structured Codes for Communications over MAC with Feedback”, *Proc. IEEE International Symposium on Information Theory (ISIT)*, June 2017.
2. F. Shirani, and S. S. Pradhan, “On the Sub-optimality of Single-letter Coding in Multi-terminal Communications”, *Proc. IEEE International Symposium on Information Theory (ISIT)*, June 2017.
3. F. Shirani, and S. S. Pradhan, “On the Correlation between Boolean Functions of Sequences of Random Variables”, *Proc. IEEE International Symposium on Information Theory (ISIT)*, June 2017.
4. M. Heidari, F. Shirani, and S. S. Pradhan, “A New Achievable Rate Region for Multiple-Access Channel with States”, *Proc. IEEE International Symposium on Information Theory (ISIT)*, June 2017.
5. F. Shirani, M. Heidari and S. S. Pradhan, “Quasi Linear Codes: Application to Point-to-Point and Multi-Terminal Source Coding”, *Proc. IEEE International Symposium on Information Theory (ISIT)*, June 2016.
6. F. Shirani, M. Heidari and S. S. Pradhan, “New Sufficient Conditions for Multiple-Access Channel with Correlated Sources”, *Proc. IEEE International Symposium on Information Theory (ISIT)*, June 2016.
7. F. Shirani, and S. S. Pradhan, “Trade-off between Communication and Cooperation in the Interference Channel”, *Proc. IEEE International Symposium on Information Theory (ISIT)*, June 2016.
8. M. Heidari and S. S. Pradhan, “How to Compute Modulo Prime-Power Sums”, *Proc. IEEE International Symposium on Information Theory (ISIT)*, June 2016.
9. F. Shirani, M. Heidari and S. S. Pradhan, “New lattices for multiple descriptions”, *Proc. IEEE International Symposium on Information Theory (ISIT)*, June 2015.
10. A. Padakandla and S. S. Pradhan, “Coset codes communicating over non-additive channels”, *Proc. IEEE International Symposium on Information Theory (ISIT)*, June 2015.
11. M. Heidari, F. Shirani and S. S. Pradhan, “Beyond group capacity in multi-terminal communications”, *Proc. IEEE International Symposium on Information Theory (ISIT)*, June 2015.
12. A. G. Sahebi and S. S. Pradhan, “Polar Codes for Some Multi-terminal Communications Problems”, *Proc. IEEE International Symposium on Information Theory (ISIT)*, July 2014.
13. F. Shirani and S. S. Pradhan, “An Achievable Rate-Distortion Region for the Multiple Descriptions Problem”, *Proc. IEEE International Symposium on Information Theory (ISIT)*, July 2014.
14. F. Shirani and S. S. Pradhan, “Finite Block-Length Gains in Distributed Source Coding”, *Proc. IEEE International Symposium on Information Theory (ISIT)*, July 2014.
15. F. Shirani, A. G. Sahebi and S. S. Pradhan, “Distributed source coding in absence of Common Components”, *Proc. IEEE International Symposium on Information Theory (ISIT)*, July 2013.
16. A. Padakandla and S. S. Pradhan, “Computing sum of sources over an arbitrary multiple access channel”, *Proc. IEEE International Symposium on Information Theory (ISIT)*, July 2013.

17. A. Padakandla and S. S. Pradhan, "A new coding theorem for three user discrete memoryless broadcast channel", *Proc. IEEE International Symposium on Information Theory (ISIT)*, July 2013.
18. A. Padakandla and S. S. Pradhan, "A new achievable rate region for multiple access with non casual states", *Proc. IEEE International Symposium on Information Theory (ISIT)*, July 2013.
19. A. G. Sahebi and S. S. Pradhan, "On Distributed Source Coding Using Abelian Group Codes", *Proc. Allerton Conference on Communication, control and computing*, Monticello, IL, September 2012.
20. A. G. Sahebi and S. S. Pradhan, "Polar Codes for Sources with Finite Reconstruction Alphabets" *Proc. Allerton Conference on Communication, control and computing*, Monticello, IL, September 2012.
21. A. Padakandla, A. G. Sahebi and S. S. Pradhan, "A new achievable rate region for the 3-user discrete memoryless interference channel", *Proc. IEEE International Symposium on Information Theory (ISIT)*, July 2012
22. A. G. Sahebi and S. S. Pradhan, "Nested Lattice Codes for Arbitrary Continuous Sources and Channels", *Proc. IEEE International Symposium on Information Theory (ISIT)*, July 2012.
23. A. G. Sahebi and S. S. Pradhan, "Codes Over Non-Abelian Groups: Point-to-Point Communications and Computation Over MAC", *Proc. IEEE International Symposium on Information Theory (ISIT)*, July 2012
24. D. L. Neuhoff and S. S. Pradhan, "Rate-Distortion Behavior at Low Distortion for Densely Sampled Gaussian Data", *Proc. IEEE International Symposium on Information Theory (ISIT)* July 2012
25. A. G. Sahebi and S. S. Pradhan, "Multi-level polarization of polar codes over arbitrary discrete memoryless channels", *Proc. Allerton Conference on Communication, control and computing*, Monticello, IL, September 2011.
26. D. L. Neuhoff and S. S. Pradhan, "Information rates of densely sampled Gaussian data", *Proc. International Symposium on Information Theory (ISIT)*, St. Petersburg, Russia, July 2011.
27. A. G. Sahebi and S. S. Pradhan "On the capacity of abelian group codes over discrete memoryless channels", *Proc. International Symposium on Information Theory (ISIT)*, St. Petersburg, Russia, July 2011.
28. A. Padakandla and S. S. Pradhan, "Nested linear codes achieve Marton's inner bound for general broadcast channels", *Proc. International Symposium on Information Theory (ISIT)*, St. Petersburg, Russia, July 2011.
29. K. Vinodh, V. Lalitha, N. Prakash, P. V. Kumar and S. S. Pradhan, "On the achievable rates of sources having a group alphabet in a distributed source coding setting", *Proc. Allerton Conference on Communication, control and computing*, Monticello, IL, September 2010.
30. A. Nazari, D. Krithivasan, S. S. Pradhan, A. Anastasopoulos, R. Venkataramanan, "Typicality Graphs and Their Properties", *Proc. IEEE International Symposium on Information Theory (ISIT)*, Austin, TX, July 2010.
31. R. Venkataramanan and S. S. Pradhan, "Achievable Rates for the Broadcast Channel with Feedback", *Proc. IEEE International Symposium on Information Theory (ISIT)*, Austin, TX, July 2010.
32. R. Venkataramanan and S. S. Pradhan, "A new achievable rate region for the discrete memoryless multiple-access channel with feedback", *Proc. IEEE International Symposium on Information Theory (ISIT)*, Seoul, Korea, June 2009.

33. A. Nazari, S. S. Pradhan, and A. Anastasopoulos, “New Bounds on the Maximal Error Exponent for Multiple-Access Channels”, *Proc. IEEE International Symposium on Information Theory (ISIT)*, Seoul, Korea, June 2009 (won a Best Student Paper Award).
34. A. Nazari, A. Anastasopoulos, and S. S. Pradhan, “A new universal random coding bound for average probability error exponent for multiple-access channels”, *Proc. Conference on Information Sciences and Systems (CISS)*, Baltimore, MD, March 2009.
35. D. Krithivasan and S. S. Pradhan, “Distributed source coding using abelian group codes: Extracting performance from structure”, *Proc. Allerton conference on communication, control and computing*, Monticello, IL, September 2008.
36. A. Nazari, S. S. Pradhan and A. Anastasopoulos, “A new lower bound on the maximal error probability for discrete memoryless multiple-access channels”, *Proc. IEEE International Symposium on Information Theory (ISIT)*, Toronto, Canada, July 2008.
37. R. Venkataramanan and S. S. Pradhan, “Multiple descriptions with feedforward: A single-letter achievable rate region”, *Proc. IEEE International Symposium on Information Theory (ISIT)*, Toronto, Canada, July 2008.
38. D. Krithivasan and S. S. Pradhan, “An achievable rate region for distributed source coding with reconstruction of an arbitrary function of the sources”, *Proc. IEEE International Symposium on Information Theory (ISIT)*, Toronto, Canada, July 2008.
39. P. Ishwar and S. S. Pradhan, “Relay-assisted distributed source coding”, *Proc. Workshop on Information Theory and Applications (ITA)*, San Diego, CA, January/February 2008.
40. D. Krithivasan and S. S. Pradhan, “Lattices for distributed source coding: Jointly Gaussian sources and reconstruction of a linear function”, *Proc. Symposium on Applied Algebra, Algebraic Algorithms, and Error Correcting Codes (AAECC-17)*, Bangalore, India, December 2007.
41. A. Josan, M. Liu, D. L. Neuhoff, and S. S. Pradhan, “Throughput Scaling in Random Wireless Networks: A Non-Hierarchical Multipath Routing Strategy”, *Proc. Allerton conference on communication, control and computing*, Monticello, IL, September 2007
42. R. Venkataramanan and S. S. Pradhan, “On evaluating the rate-distortion function of sources with feedforward and the capacity of channels with feedback”, *Proc. IEEE International Symposium on Information Theory (ISIT)* Nice, France, July 2007.
43. S. S. Pradhan, and D. L. Neuhoff, “Transform coding of densely sampled Gaussian data”, *Proc. IEEE International Symposium on Information Theory (ISIT)* Nice, France, July 2007.
44. D. Krithivasan and S. S. Pradhan, “On large deviation analysis of sampling from typical sets”, *Proc. Workshop on Information Theory and Applications (ITA)*, San Diego, CA, January/February 2007.
45. D. L. Neuhoff and S. S. Pradhan, “Centralized and distributed lossy source coding of densely sampled Gaussian data with and without transforms”, *Proc. Workshop on Information Theory and Applications (ITA)*, San Diego, CA, January/February 2007.
46. S. Choi and S. S. Pradhan, “Representation of Correlated Sources into Graphs for Transmission over Broadcast Channels”, *Proc. International Symposium on Information Theory (ISIT)*, Seattle, WA, July 2006.
47. E. Duarte-Melo, A. Josan, M. Liu, D. L. Neuhoff and S. S. Pradhan, “The effect of node density and propagation model on throughput scaling of wireless networks”, *Proc. International Symposium on Information Theory (ISIT)*, Seattle, WA, July 2006.

48. D. L. Neuhoff and S. S. Pradhan, "An upper bound to the rate of ideal distributed lossy source coding of densely sampled data", *Proc. International Conference on Acoustics Speech and Signal Processing (ICASSP)*, Toulouse, France, May 2006.
49. R. Venkataramanan and S. S. Pradhan, "Directed information for communication problems with common side information and delayed feedback/feedforward", *Proc. Allerton conference on communication, control and computing*, Monticello, IL, September 2005
50. S. S. Pradhan, "Multiple description source coding with feedforward: Gaussian sources", *Proc. Conference on Information Sciences and Systems (CISS)*, Baltimore, MD, March 2005
51. S. Choi and S. S. Pradhan, "Transmission of correlated messages over broadcast channels", *Proc. Conference on Information Sciences and Systems (CISS)*, Baltimore, MD, March 2005
52. R. Venkataramanan and S. S. Pradhan, "Source coding with feedforward", *Proc. IEEE Information Theory Workshop (ITW)*, San Antonio, TX, October 2004.
53. L. Weng, A. Anastasopoulos and S. S. Pradhan, "Diversity gain region for MIMO broadcast channels", *Proc. IEEE Information Theory Workshop (ITW)*, San Antonio, TX, October 2004.
54. L. Weng, S. S. Pradhan and A. Anastasopoulos, "Diversity gain region for MIMO fading multiple access channels", *Proc. Allerton Conference on Communications, Control and Computing*, Monticello, IL, September 2004.
55. S. S. Pradhan, "Source coding with feedforward: Gaussian sources", *Proc. IEEE International Symposium on Information Theory (ISIT)*, p 212, Chicago, IL, June 2004.
56. L. Weng, A. Anastasopoulos, S. S. Pradhan, "Error exponents region for Gaussian multiple access and Gaussian broadcast channels", *Proc. IEEE International Symposium on Information Theory (ISIT)*, p 446, Chicago, IL, June 2004.
57. S. S. Pradhan, S. Choi and K. Ramchandran, "Achievable rates for multiple access channels with correlated messages", *Proc. IEEE International Symposium on Information Theory (ISIT)*, p 108, Chicago, IL, June 2004.
58. L. Weng, S. S. Pradhan and A. Anastasopoulos, "Error exponent region for Gaussian broadcast channels" *Proc. Conference on Information Sciences and Systems (CISS)*, Princeton, NJ, March 2004.
59. S. S. Pradhan, "Approximation of test channels in source coding", *Proc. Conference on Information Sciences and Systems (CISS)*, Princeton, NJ, March 2004.
60. L. Weng, S. S. Pradhan and A. Anastasopoulos, "Coding with transmitter side information for wireless channels", *Proc. Allerton Conference on Communications, Control and Computing*, Monticello, IL, October 2003.
61. P. Ishwar, R. Puri, S. S. Pradhan and K. Ramchandran "On rate-constrained estimation in unreliable sensor networks", *Proc. 2nd International Workshop on Information Processing in Sensor Networks (IPSN)*, Palo Alto, CA, pp. 178-192, April 2003.
62. J. Chou, S. S. Pradhan and K. Ramchandran, "Turbo and trellis-based codebooks for source coding with side information", *Proc. IEEE Data Compression Conference (DCC)*, pp. 33-42, Snowbird, UT, March 2003.
63. S. S. Pradhan and K. Ramchandran, "On functional duality between MIMO source and channel coding with one-sided collaboration", *Proc. IEEE Information Theory Workshop*, pp. 115-118, Bangalore, India, October 2002.

64. S. S. Pradhan, J. Chou and K. Ramchandran, "A characterization of functional duality between source and channel coding", *Proc. IEEE International Symposium on Information Theory (ISIT)*, p 224, Lausanne, Switzerland, June 2002.
65. R. Puri, S. S. Pradhan and K. Ramchandran, "n-channel symmetric multiple descriptions: New rate regions", *Proc. IEEE International Symposium on Information Theory (ISIT)*, p 93, Lausanne, Switzerland, June 2002.
66. R. Puri, S. S. Pradhan and K. Ramchandran, "n-channel multiple descriptions: Theory and constructions", *Proc. IEEE Data Compression Conference (DCC)*, pp. 262-271, Snowbird, UT, March 2002.
67. S. S. Pradhan, R. Puri and K. Ramchandran, "(n,k) Source-channel erasure codes: Can parity bits also refine quality?", *Proc. Conference on Information Sciences and Systems (CISS)*, vol. 1, pp. 274-279, Baltimore, MD, March 2001.
68. S. S. Pradhan and K. Ramchandran, "Enhancing analog image transmission systems using digital side information: A new wavelet based image coding paradigm", *Proc. IEEE Data Compression Conference (DCC)*, pp. 63-72, Snowbird, UT, March 2001.
69. S. S. Pradhan and K. Ramchandran, "Geometric proof of rate distortion function of Gaussian sources with side information at the decoder", *Proc. IEEE International Symposium on Information Theory (ISIT)*, p 351, Sorrento, Italy, June 2000.
70. S. S. Pradhan and K. Ramchandran, "Distributed source coding: Symmetric rates and applications to sensor networks", *Proc. IEEE Data Compression Conference (DCC)*, pp. 363-372, Snowbird, UT, March 2000.
71. S. S. Pradhan and K. Ramchandran, "Group-theoretic construction and analysis of generalized coset codes for symmetric/asymmetric distributed source coding", *Proc. Conference on Information Sciences and Systems (CISS)*, pp. FA1-1-FA1-5, Princeton, NJ, March 2000.
72. J. Chou, S. S. Pradhan and K. Ramchandran, "On the duality between distributed source coding and data hiding", *Proc. 33rd Asilomar Conference on Signals, Systems and Computers*, vol. 2, pp. 24-27, Pacific Grove, CA, November 1999.
73. S. S. Pradhan and K. Ramchandran, "Distributed source coding using syndromes (DISCUS): Design and construction", *Proc. IEEE Data Compression Conference (DCC)*, pp. 158-167, Snowbird, UT, March 1999.
74. S. S. Pradhan and K. Ramchandran, "Optimized embedded multicarrier modulation for efficient delivery of layered video data", *Proc. IEEE International Conference on Communications (ICC)*, vol.2, pp. 1009-1012, Atlanta, GA, June 1998.
75. D. K. Anvekar and S. S. Pradhan, "HCE: A new channel exchange scheme for handovers in mobile cellular systems", *Proc. IEEE International Conference on Personal Wireless Communication*, pp. 129-133, New Delhi, India, February 1996.