KANNAN RAMCHANDRAN
EECS Department
University of California
269 Cory Hall
Berkeley ,CA 94720
Tel.:510-642-2353 (work)
email:kannanr@eecs.berkeley.edu URL:http://www.eecs.berkeley.edu/～kannanr/

A. Professional Preparation:

Ph.D., Elec. Engineering, Columbia University, New York *June 1993*
M.S., Elec. Engineering, Columbia University, New York *May 1984*

B. Appointments:

University of California at Berkeley *June 1999-Present*

Professor, EECS Department:

- Instructor for undergraduate and graduate classes in digital signal and image processing, communication systems, probability, coding, linear systems, and information theory.
- Ph.D. thesis advisor to about 10 post-graduate, graduate and undergraduate research students.
- Director, Berkeley Audiovisual Signal processing and Communication Systems (BASiCS) Research Group
- Co-Director, Berkeley Laboratory for Information Sciences and Systems (BLISS) Center

University of Illinois at Urbana-Champaign *August 1993-May 1999*

Assistant Professor, ECE Department:

- Teacher for undergraduate and graduate classes in digital signal and image processing.
- Research Assistant Professor, Beckman Institute and Coordinated Science Laboratory:
- Associate Director of Multimedia Laboratory at the Beckman Institute

AT&T Bell Labs, N.J. (Member of the Technical Staff) *March 1984 – September 1990*
R&D Design Engineer

C. Selected awards, honors, professional activities:

- Awarded the Gilbert Henry Gates Endowed Chair in Electrical Engineering and Computer Science at UC Berkeley (2022-27)
- Institute of Electrical and Electronics Engineers (IEEE) Communications Society and Information Theory Society Joint Best Paper Award (2020).
- Selected as the Padovani Lecturer for 2019 by the Institute of Electrical and Electronic Engineers (IEEE) Information Theory Society.
- **Recipient of the 2017 Institute of Electrical and Electronics Engineers (IEEE) Kobayashi Computers and Communications Award** (a Field award in recognition of outstanding contributions to the integration of computers and communications) **for pioneering contributions to the theory and practice of distributed compression and storage coding.**
- **Elected Fellow of the Institute of Electrical and Electronic Engineers (IEEE) in 2005 for contributions to image and video compression and transmission.**
- Best Paper award from Optical Society of America Imaging Systems, July 2014 for paper published in Biomedical Optics Express.

AMAZON-1004
7,280,599

- Best Paper Finalist, IEEE International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunications Systems (MASCOTS), Aug 2013.
- Institute of Electrical and Electronics Engineers (IEEE) Communications Society and Information Theory Society Joint Best Paper Award (2012).
- Selected as one of the six Grand Challenge Winners of the U.S. Department of Transportation's Research and Innovative Technology Administration (RITA) nation-wide competition in 2011 for innovative ideas on the use of wireless technology to enable vehicles to communicate with one another.
- Institute of Electrical and Electronics Engineers (IEEE) 2010 Communication Society Committee on Data Storage Best Paper Award (2010).
- **Outstanding Teaching Award in the EECS Department at UC Berkeley, 2008-2009.**
- Best Paper Award: "Vsync: a novel bi-directional compression protocol for video file synchronization," ACM Multimedia, October 2008, Vancouver.
- Best Paper Award, "Enhancing peer-to-peer live multicast quality using helpers," IEEE International Conference on Image Processing 2008, San Diego.
- Best Paper Award, "Robust distributed multi-view video compression for wireless camera networks," Video Communication and Image Processing Conference 2007, San Jose.
- Best Paper Award, "Ubiquitous access to distributed data in large-scale sensor networks through decentralized erasure codes," Fourth ACM/IEEE Conference on Information Processing for Sensor Networks, April 2005, Los Angeles.
- Okawa Foundation Award at UC Berkeley (2001) chosen to recognize excellence in research
- IEEE Signal Processing Society Best Paper Award for 1999 paper, "Rate-distortion methods in image and video compression."
- Selected as inaugural Henry Magnusky Scholar at the University of Illinois in 1998 chosen to recognize "excellent junior faculty"
- National Science Foundation CAREER Award for 1997.
- Office of Naval Research Young Investigator Award for 1997.
- IEEE Signal Processing Society Best Senior Paper Award for 1996 for paper "Best wavelet packet bases in a rate-distortion sense."
- Army Research Office Young Investigator Award for 1996.
- NSF Research Initiation Award for 1994-1996.
- Elaihu I. Jury Award Best Doctoral Thesis Award in systems and communications at Columbia University for 1993.
- Invited plenary speaker at several conferences and workshops in field.
- Serve actively as industrial technical consultant in image and video processing and wireless networking areas.

D. Litigation Experience

Case: Cloudera vs. Streamscale

Matter: patent infringement contention related to distributed storage systems technology.
Responsibilities: Expert witness on infringement contentions, wrote expert report, gave deposition testimony, testified in court (2023).

Case: Google vs. Personalized Media Communications (PMC)

Matter: patent infringement contention related to suite of patents on video streaming technology.
Responsibilities: Expert witness on invalidity contentions, wrote expert report, and gave deposition testimony (2020).

Case: Caltech vs. Apple

Matter: patent infringement contention related to suite of patents on sparse parity check

codes for transmission over Digital Video Broadcast-Satellite (DVB-S) standard.
Responsibilities: Expert witness, involved in the Markman claim construction, wrote expert report (2018)

Case: ViaSat vs. Acacia
Matter: breach of contract dispute related to satellite communications technology.
Responsibilities: Served as expert witness and gave a bunch of tutorials. (Dec. 2016-May 2017).

Case: AT&T Mobility vs Intellectual Ventures
Matter: patent infringement contention related to OFDM and LTE standards.
Responsibilities: Expert witness, studied prior art and OFDM/LTE standards but case was settled (2016).

Case: Kodak vs. Ricoh
Matter: license breach related to digital camera technology
Responsibilities: Wrote expert report and gave expert testimony in district court of New York (lower Manhattan) (October 2013).

Case: Credit Suisse vs. Realtime Data
Matter: patent infringement related to transmission standard for financial data transmission in district court of New York
Responsibilities: Wrote non-infringement expert report and gave deposition testimony (Aug. 2012)

Case: Kodak vs. RIM/Apple
Matter: ITC patent infringement related to digital camera technology
Responsibilities: Studied prior art and related literature, wrote infringement and rebuttal to invalidity reports, was deposed, presented Markman tutorial to ITC judge, and gave expert testimony in court. (September 2010).

Case: Kodak vs. LG/Samsung
Matter: ITC patent infringement related to digital camera technology
Responsibilities: Studied prior art and related literature, wrote infringement and rebuttal to invalidity reports, was deposed, presented tutorial to ITC judge and gave expert testimony in court. (October 2009).

Case: Funai vs. Respondents
Matter: ITC patent infringement related to high-definition digital television apparatus and display technology
Responsibilities: Studied prior art and related literature, wrote infringement and rebuttal to invalidity reports, was deposed, presented tutorial to ITC judge and gave expert testimony in court. (August 2008).

Case: Funai/Sony vs. Amtran
Matter: ITC patent infringement related to high-definition digital television technology.
Responsibilities: Studied prior art and related literature, and did infringement analysis. Case was settled before going to trial. (2008).

Case: Broadcom vs. Qualcomm
Matter: Patent infringement related to video compression technology
Responsibilities: Studied patents and related literature, wrote invalidity and non-infringement expert reports, was deposed twice and gave expert testimony in court. (2007)

E. Patents and invention disclosures:

- K. Ramchandran and K. Javitt, “Circuit for digitally adding loss to a signal". Granted U.S. Patent

Number 5,237,591 (issued Aug. 1993, AT&T).

- K. Ramchandran, K. M. Uz, and M. Vetterli, "Multi-resolution joint source-channel coding and applications to digital broadcast". Granted U.S. Patent Number 5,267,021 (issued Nov. 1993). *(A modified version of the method proposed in this patent was considered for the European Digital Audio and Video Broadcasting Standard.)*
- K. Ramchandran, Y. Yu, M. Vetterli, and D. Anastassiou, "Fast rate-distortion optimal adaptive thresholding for JPEG & MPEG with complete decoder compatibility," Invention report filed, June'93. Granted U.S. Patent Number 5,734,755 (issued March 1998).
- B. Krongold, D. Jones and K. Ramchandran, "Computationally Efficient Optimal Power Allocation Algorithms for Multicarrier Communications Systems". Granted U.S. Patent No. 6,400,773 (issued June 2002).
- K. Ramchandran, J. Chou and I. Kozintsev, "Data transmission using arithmetic coding based continuous error detection". Granted U.S. Patent No. 6,418,549 (issued July 2002).
- S. Ha, S. Han, T. Kim, V. Bharghavan, U. Madhow and K. Ramchandran, "Data transport acceleration and management within a network communication system". Granted U.S. Patent No. 7,099,273 (issued August 2006).
- R. Puri and K. Ramchandran, "Encoding and decoding of digital data using cues derivable at a decoder," Granted U.S. Patent Number 7,400,774 (issued July 2008). Granted U.S. Patent Number 7,400,774 (issued July 2008).
- J. Chou and K. Ramchandran, "Transcoding multimedia information within a network communication system," Granted U.S. Patent Number 7,444,418 (issued Oct. 2008).
- U. Madhow, B. Wild, and K. Ramchandran, "Systems and methods of beamforming in radio frequency identification applications," Granted U.S. Patent Number 7,652,577 (issued Oct. 2008).
- H. Garudadri and K. Ramchandran, "Method, apparatus, and system for encoding and decoding side information for multimedia transmission," Granted U.S. Patent Number 7,643,358 (issued Jan. 2010).
- J. Gilbert, K. Ramchandran, and G. Song, "Mechanism for streaming media data over wideband wireless networks with error concealment," Granted U.S. Patent Number 7,881,258 (issued Feb. 2011).
- P. Ahammad, C. Yeo, K. Ramchandran and S. Sastry, "High-speed video action recognition and localization," Granted U.S. Patent Number 8,027.542 (issued Sept. 2011).
- H. Garudadri, N. Srinivasamurthy, H. Chung, K. Ramchandran and A. Majumdar, "Method, apparatus, and system for enhancing robustness of predictive video codecs using a side channel based on distributed source coding techniques," U.S. patent application 2008/0267288 (filed May 2008).
- J. Chou and K. Ramchandran, "Decoding compressed image data," U.S. patent application 2003/0035586 (filed May 2002).
- K. Ramchandran, B. Wild, A. Tkachenko, and U. Madhow, "Localizing tagged assets using modulated backscatter systems," International patent application number PCT/US2009/0212921 (filed Feb. 2008).
- B. Wild, U. Madhow, K. Ramchandran, R. Barton, and A. Tkachenko, "Applique nodes for performance and functionality enhancement in radio frequency identification systems," U.S. patent application 2010/0013601 (filed March 2009).
- B. Wild, U. Madhow, K. Ramchandran, and A. Tkachenko, "Range extension and multiple access in modulated backscatter systems," U.S. patent application 2010/0060424, Filed March 2009.
- B. Wild, U. Madhow, and K. Ramchandran, "RFID Repeater for range extension in modulated backscatter systems," U.S. patent application 2010/156610 (filed Aug. 2009).

F. Selected talks and visiting appointments:

- Several keynote and invited talks over the past decade at top IEEE conferences in fields of image processing, multimedia signal processing, wireless sensor networks and information theory.
- Invited keynote speaker, IEEE Information Theory Workshop, Brazil (2011), Picture Coding Symposium, San Francisco, California (2004), IEEE International Conference on Video and Image Processing, Switzerland (2004), IEEE Statistical Signal Processing Workshop, St. Louis, Missouri (2003).
- Invited seminar colloquium speaker at several institutions including Stanford, MIT, UIUC, EPFL (Switzerland), Michigan, Wisconsin, Microsoft Research, Indian Institute of Science, Bangalore, HP Research, IBM Research, etc.
- Invited panelist, NSF workshops on the Future of Spectrum (2003), Sensor Networks (2002), Future of Wireless (2001), Joint Source-Channel Coding (2000).
- Institute of Mathematical Applications, Minneapolis, MN (Summer 2001)
- Math. Sciences Research Center, Lucent Technologies, Murray Hill, NJ *(Summer 1998)*
- Visiting Professor, Electrical Engineering Department, Ecole Polytechnique Federal de Lausanne, Lausanne, Switzerland *(Summer 1997* and *Summer 2001)*
- Communications Research Group, AT&T Research Labs, Florham Park, NJ *(Summer 1997)*
- Imaging Technology Dept., Hewlett-Packard Research Labs, Palo Alto, CA *(Summer 1994)*

G. Publications: I have published over 700 refereed journal & conference publications in the broad areas of communications, signal and image processing, machine learning, and information theory**.** I have served as the doctoral thesis advisor to 30 Ph.D. students, who after graduating, have gone on to become academic and industrial leaders in the field. In addition, I have supervised the M.S. theses of over 25 students, and served as a mentor for about 24 postdoctoral scholars.

- Here is a select list of my publications:

A. *Books & Book Chapters*

1. Z. Xiong and K. Ramchandran, "Wavelet Image Compression" in "Handbook of Image and Video Processing," editor Alan C. Bovik, Elsevier Publications, 2010.
2. G. Dimakis and K. Ramchandran, ``Network Coding for Distributed Storage in Wireless Networks," in V. Saligrama, editor, Networked Sensing Information and Control, Signals and Communication series, Springer Verlag, October 2007.
3. Raouf Hamzaoui, Vladimir Stankovic, Zixiang Xiong, Kannan Ramchandran, Rohit Puri, Abhik Majumdar, and Jim Chou, "Channel Protection Fundamentals, in Multimedia over IP Wired and Wireless Networks" edited by Philip A. Chou and Mihaela van der Schaar, publisher: Elsevier, ISBN-13: 978-0-12-088480-3, ISBN-10: 0-12-088480-1, Publication Date: March 2007.
4. Abhik Majumdar, Rohit Puri, Kannan Ramchandran, and Jim Chou, "Distributed Video Coding and its Applications, in Multimedia over IP Wired and Wireless Networks edited by Philip A. Chou and Mihaela van der Schaar, publisher: Elsevier, ISBN-13: 978-0-12-088480-3, ISBN-10: 0-12-088480-1, Publication Date: March 2002.
5. A. Kumar, P. Ishwar, and K. Ramchandran, ``On distributed sampling of smooth non-bandlimited fields," in the Third International Symposium on Information Processing in Sensor Networks, April 26-27, 2004, Berkeley, CA, pp. 89-98, ACM Press, 2004.
6. P. Ishwar, A. Kumar, and K. Ramchandran, ``Distributed sampling for dense senor networks:

a ``bit- onservation principle"," in Information Processing in Sensor Networks: Second International Workshop, IPSN 2003, Palo Alto, CA, April 22-23, 2003, (Lecture Notes in Computer Science) (L. J. Guibas and F. Zhao, eds.), pp. 17-31, Springer, New York, NY 2003.

7. P. Ishwar, R. Puri, S. S. Pradhan, and K. Ramchandran, ``On rate-constrained estimation in unreliable sensor networks," in Information Processing in Sensor Networks: Second International Workshop, IPSN 2003, Palo Alto, CA, April 22-23, 2003, (Lecture Notes in Computer Science) (L. J. Guibas and F. Zhao, eds.), pp. 178-192, Springer, New York, NY 2003.
8. K. Ramchandran and M. Vetterli, "Multiresolution Joint Source-Channel Coding," in Wireless Communications: Signal Processing Perspectives. Editors: H. Vincent Poor and Gregory W. Wornell. Prentice Publications, 1998.

B. *Archived Journal Publications*

- N. B. Shah, K. V. Rashmi, P. V. Kumar, and K. Ramchandran, "Distributed Storage Codes with Repair-by-Transfer and Non-Achievability of Interior Points on the Storage-Bandwidth Tradeoff," IEEE Transactions on Information Theory, Vol. 58, No. 3, March 2012, pp. 1837-1852.
- N. B. Shah, K. V. Rashmi, P. V. Kumar, and K. Ramchandran, "Interference Alignment in Regenerating Codes for Distributed Storage: Necessity and Code Constructions," IEEE Transactions on Information Theory, Vol. 58, No. 4, April 2012, pp. 2134-2158.
- H. Zhang, C. Yeo and K. Ramchandran, "VSYNC - Bandwidth-Efficient and Distortion-Tolerant Video File Synchronization," IEEE Transactions on Circuits and Systems for Video Technology, Vol. 22, No. 1, January 2011, pp. 67-76.
- A. Kumar, P. Ishwar, and K. Ramchandran, "High-Resolution Distributed Sampling of Bandlimited Fields With Low-Precision Sensors," IEEE Transactions on Information Theory, Vol. 57, No. 1, January 2011, pp. 476-492.
- K. Eswaran, M. Gastpar, and K. Ramchandran," Cognitive Radio Through Primary Control Feedback," IEEE Journal on Selected Areas in Communications, Vol. 29 (2), February 2011, pp. 384–393
- A. G. Dimakis, K. Ramchandran, Y. Wu, and C. Suh, "A Survey on Network Codes for Distributed Storage," Proceedings of the IEEE, Vol. 99, No. 3, March 2011.
- V. M. Prabhakaran, R. Puri, and K. Ramchandran, "Hybrid Digital-Analog Codes for Source-Channel Broadcast of Gaussian Sources over Gaussian Channels," IEEE Transactions on Information Theory Vol. 57, No. 7, July 2011, pp. 4573-4588.
- S. Pawar, S. El Rouayheb and K. Ramchandran,"Securing Dynamic Distributed Storage Systems against Eavesdropping and Adversarial Attacks," IEEE Transactions on Information Theory (Special Issue on Facets of Coding Theory: from Algorithms to Networks), Vol. 57, No. 9, September 2011.
- C. Yeo, P. Ahammad and K. Ramchandran, "Coding of Image Feature Descriptors for Distributed Rate-Efficient Visual Correspondences", International Journal of Computer Vision, Vol. 94, No. 3, September 2011, pp. 995-1008.
- C. Yeo and K. Ramchandran, "Robust Distributed Multiview Video Compression for Wireless Camera Networks," IEEE Transactions on Image Processing, Vol. 19, No. 4, April 2010, pp. 995-1008.
- A. Kumar, P. Ishwar, and K. Ramchandran, ``Dithered A/D conversion of Smooth Non-Bandlimited Signals," IEEE Transactions on Signal Processing, Vol. 58, May 2010, pp. 2654-2666.
- A. G. Dimakis, P. B. Godfrey, Y. Wu, M. J. Wainwright and K. Ramchandran,"Network Coding for Distributed Storage Systems," IEEE Transactions on Information Theory, Vol. 56, No. 9, September

2010.

- Jiajun Wang, Abhik Majumdar, and Kannan Ramchandran, “Robust Video Transmission with Distributed Source Coded Auxiliary Channel, “ IEEE Transactions on Image Processing, Vol. 18, No.12, December 2009, pp. 2695 -2705.
- Vinod M. Prabhakaran, Rohit Puri, and Kannan Ramchandran, “Colored Gaussian Source-channel Broadcast for Heterogeneous (Analog/Digital) Receivers” , IEEE Transactions on Information Theory, Vol. 54, No. 4, April 2008, pp 1807-1814.
- Yeo, P. Ahammad, K. Ramchandran and S. S. Sastry, "High Speed Action Recognition and Localization in Compressed Domain Videos” , IEEE Transactions on Circuits and Systems for Video Technology, Vol. 18, No. 8, August 2008, pp.1006-1015.
- D. Schonberg, S. Draper, C. Yeo and K. Ramchandran, "Toward Compression of Encrypted Image and Video Sequences”, IEEE Transactions on Information Forensics and Security, Vol. 3, No. 4, December 2008, pp. 749-762.
- Rohit Puri, Abhik Majumdar and Kannan Ramchandran, “PRISM: A Video Coding Paradigm Based with Motion Estimation at the Decoder”, IEEE Transactions on Image Processing, Vol.16, No. 10, October 2007, pp 2436-2448.
- A. K. Fletcher, S. Rangan, V. K. Goyal, and K. Ramchandran, “Robust Predictive Quantization: Analysis and Design via Convex Optimization,” IEEE J. Selected Topics in Signal Processing, vol. 1, no. 4, pp. 618–632, Dec 2007.
- A. G. Dimakis, V. M. Prabhakaran, and K. Ramchandran, “Decentralized Erasure Codes for Distributed Networked Storage”, IEEE Transactions on Information Theory/ACM Transactions on Networking: Special issue on Networking and Information Theory, Vol. 52, No. 6, July, 2006, pp. 2809- 2816.
- R. Puri, A. Majumdar, P. Ishwar, and K. Ramchandran, “Distributed Video Coding in Broadband Wireless Sensor Networks,” IEEE Signal Processing Magazine, Special Issue on Distributed Signal Processing in Sensor Networks, Vol. 23, No. 4, July 2006, pp. 94-106.
- Rohit Puri and Kannan Ramchandran. “VISDOM: Video Streaming Using Distributed Encoding Over Multiple Servers ,” IEEE Transactions on Circuits and Systems for Video Technology, October 2006.
- Marco Tagliasacchi, Abhik Majumdar, Kannan Ramchandran, and Stefano Tubaro, “Robust Wireless Video Multicast Based on a Distributed Source Coding Approach”, EURASIP Signal Processing Journal, Volume 86 , Issue 11, Special Section: Distributed source coding, November 2006, pp. 3196 – 3211.
- A. K. Fletcher, S. Rangan, V. K. Goyal, and K. Ramchandran, “Denoising by Sparse Approximation: Error Bounds Based on Rate–Distortion Theory,” EURASIP J. Applied Signal Processing, Special Issue on Overcomplete Representations, vol. 2006, March 2006, 19 pages.
- P. Ishwar, R. Puri, K. Ramchandran, and S. S. Pradhan, ``On Rate-Constrained Distributed Estimation in Unreliable Sensor Networks," IEEE Journal on Selected Areas in Communications, Special issue on Self-Organizing Distributed Collaborative Sensor Networks, Vol. 23, April 2005, pp. 765-775.
- Rohit Puri, S. Sandeep Pradhan and Kannan Ramchandran, “ n-Channel Symmetric Multiple Descriptions—Part II: An Achievable Rate-Distortion Region”, IEEE Transactions on Information Theory, Vol. 51, No. 4, April 2005, pp.1377-1392.
- Prakash Ishwar, Rohit Puri, S. Sandeep Pradhan, and Kannan Ramchandran, “On Rate-Constrained Distributed Estimation in Unreliable Sensor Networks,” IEEE Journal on Selected Areas in Communications, Vol. 23, No. 4, April 2005, pp. 765-775.
- Sandeep Pradhan, Rohit Puri and Kannan Ramchandran, “n-Channel Symmetric Multiple Descriptions - Part I: (n,k) Source Channel Erasure Codes”, IEEE Transactions on Information Theory, Vol. 50, No. 1, January 2004, pp. 47-61.
- M. Johnson, P. Ishwar, V. Prabhakaran, D. Schonberg, and K. Ramchandran, “On Compressing

Encrypted Data," IEEE Transactions on Signal Processing: Special Supplement on Secure Media, Vol. 52, No. 10, October 2004, pp. 2992–3006.

- K. Fletcher, K. Ramchandran, and V. K. Goyal, "Estimation from Lossy Sensor Data: Jump Linear Modeling and LMI Analysis," Proc. ACM Information Processing in Sensor Networks 2004, pp. 251–258.
- Abhik Majumdar, Daniel Grobe Sachs, Igor Kozintsev, Kannan Ramchandran, and Minerva Yeung, "Multicast and Unicast Real-Time Video Streaming over Wireless LANs", IEEE Transactions on CSVT, Vol. 12, June 2002, pp.524-534
- Rohit Puri, Kang-Won Lee, Kannan Ramchandran and Vaduvur Bharghavan, " An Integrated Source Transcoding and Congestion Control Paradigm for Video Streaming in the Internet," IEEE Transactions on Multimedia, Vol. 3, No. 1, March 2001, pp.18-32
- Rohit Puri, Kang-Won Lee, Kannan Ramchandran and Vaduvur Bharghavan, " Forward Error Correction (FEC) Codes Based Multiple Description Coding for Internet Video Streaming and Multicast," Elsevier Signal Processing: Image Communication, Vol. 16, No. 8, May 2001, pp. 745-762.
- K. Mihcak, I. Kozintsev, K. Ramchandran, and P. Moulin. Low-complexity image denoising based on statistical modeling of wavelet coefficients. IEEE Signal Processing Letters, Volume 6, Issue 12, Dec. 1999, , pp. 300-3.
- J. Chou, M. Crouse, and K. Ramchandran. A simple algorithm for removing blocking artifacts in block-transform coded images. IEEE Signal Processing Letters, Volume 5, Issue 2, Feb. 1998, pp. 33-35.
- K. Ramchandran and M. Vetterli. Best wavelet packet bases in a rate-distortion sense. IEEE Trans. on Image Processing, Volume 2, No.2, April 1993, pp.160-175.
- D. Schonberg, S. Draper, C. Yeo, and K. Ramchandran. Toward Compression of Encrypted Images and Video Sequences. IEEE Transactions on Information Forensics and Security, Volume 3, Issue 4, Dec. 2008, pp. 749-62.
- R. Puri, A. Majumdar, and K. Ramchandran. PRISM: A video paradigm with motion estimation at the decoder. IEEE Trans. on Image Processing, Volume 16, Issue 10, Oct. 2007, pp. 2436-48.
- K. Ramchandran and M. Vetterli. Rate-distortion optimal fast thresholding with complete JPEG/MPEG decoder compatibility. IEEE Trans. on Image Processing, Volume 3, Issue 5, Sept. 1994, pp. 700-4.
- K. Ramchandran, A. Ortega and M. Vetterli.. Bit allocation for dependent quantization with applications to multiresolution and MPEG video coders. IEEE Transactions on Image Processing, vol.3, (no.5), Sept. 1994. p.533-457.
- A. Ortega, K. Ramchandran and M. Vetterli. Optimal trellis-based buffered compression and fast approximations. IEEE Transactions on Image Processing, vol.3, (no.1), Jan. 1994. p.26-40.
- K. Ramchandran, M.Vetterli and C. Herley. Wavelets, Subband Coding and Best Bases. Proceedings of the IEEE, Special Issue on Wavelets: Invited Paper, April 1996, pp.541-560.
- M. Crouse and K. Ramchandran.. Joint thresholding and quantizer selection for transform image coding: entropy-constrained analysis and applications to baseline JPEG. IEEE Transactions on Image Processing, vol.6, (no.2), IEEE, Feb. 1997. p.285-97.
- K. Ramchandran and M. Vetterli. Joint Source Channel Coding for Wireless Channels. In Wireless Communications: A Signal Processing Perspective, Prentice-Hall, 1998.
- I. Kozintsev and K. Ramchandran. Robust mage transmission over energy-constrained time- varying channels using multi-resolution joint source-channel coding. IEEE Trans. on Signal Processing, Special Issue on Wavelets and Filter Banks, Vol.46, No.4,April 1998.
- K. Ramchandran, A. Ortega, K.M. Uz and M.Vetterli. Multiresolution broadcast for digital HDTV using joint source–channel coding. IEEE JSAC Special Issue on HDTV and Digital Video Communications, Volume 11, No.1, pp.6-23, Jan.1993.

- Ortega and K. Ramchandran. Rate-Distortion Methods in Image and Video Compression: An Overview. IEEE Signal Processing Magazine, Invited Paper: Special Issue on Image and Video Compression, October 1998, pp.20 –50.
- X. Yang, and K. Ramchandran. Scalable wavelet video coding using aliasing-reduced hierarchical motion compensation. IEEE Transactions of Image Processing, vol.9, no.5, May 2000, pp.778-91.

C.. *Refereed Conference Publications*

- Nan Ma, Kannan Ramchandran and David Tse, "A Compression Algorithm Using Misaligned Side Information", IEEE International Symposium Information Theory 2012 (ISIT'12), Cambridge, MA, July 1-6, 2012.
- Longbo Huang, Sameer Pawar, Hao Zhang and Kannan Ramchandran, "Codes Can Reduce Queueing Delay in Data Centers", IEEE International Symposium Information Theory 2012 (ISIT'12), Cambridge, MA, July 1-6, 2012.
- Hao Zhang, Chuohao Yeo and Kannan Ramchandran, "VSYNC -- Bandwidth-efficient And Distortion-tolerant Video File Synchronization," IEEE Transactions on Circuits and Video Technology, 2012.
- N. Milosavljevic, S. Pawar, S. El Rouayheb, M. Gastpar, and K. Ramchandran, "Data ExchangeProblem with Helpers," Proc. IEEE International Symposium Information Theory, 2012 (ISIT'12),Cambridge, MA, July 1-6, 2012
- K. V. Rashmi, N. B. Shah, K. Ramchandran, and P. Kumar, "Regenerating Codes for Errors and Erasures in Distributed Storage," in Proc. International Symposium on Information Theory, 2012 (ISIT '12), Cambridge, MA, July 1-6, 2012.
- Venkatesan Ekambaram, Kannan Ramchandran, "Non-Line-of-Sight Localization Using Low-rank + Sparse Matrix Decomposition", IEEE Statistical Signal Processing Workshop (SSP) 2012, Ann Arbour, Michigan.
- Ziyu Shao, Hao Zhang, Minghua Chen and Kannan Ramchandran, "Reverse-Engineering BitTorrent: A Markov Approximation Perspective", in Proceedings of IEEE INFOCOM (mini-conference), Orlando, Florida, USA, Mar. 25 - 30, 2012.
- Jaeyoung Choi, Gerald Friedland, Venkatesan Ekambaram and Kannan Ramchandran, "Multimodal Location Estimation of Consumer Media: Dealing with Sparse Training Data", ICME 2012, Melbourne, Australia.
- Nan Ma, Kannan Ramchandran and David Tse, "On Minimum-Rate Synchronization Based on Bursty Deletion Side-information", in Proc. IEEE International Symposium Information Theory 2011 (ISIT'11), Saint Petersburg, Russia, Jul. 31-Aug. 5, 2011, pp. 583–587.
- Sameer Pawar, Salim Rouayheb, Hao Zhang, Kangwook Lee and Kannan Ramchandran, "Codes for a Distributed Caching based Video-On-Demand System", Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, CA, November 6-9, 2011.
- Hao Zhang, Minghua Chen, Abhay Parek and Kannan Ramchandran, "A Distributed Multichannel Demand-Adaptive P2P VoD System with Optimized Caching and Neighbor-Selection", in Proceedings of SPIE, San Diego, CA, 2011.
- Hao Zhang, Ziyu Shao, Minghua Chen, and Kannan Ramchandran, "Optimal Neighbor Selection in BitTorrent-like Peer-to-Peer Networks", in Proceedings of ACM SIGMETRICS, San Jose, CA, US, June 7-11, 2011.
- S. Pawar, N. Noorshams, S. El Rouayheb, K. Ramchandran, "DRESS Codes for the Storage Cloud: Simple Randomized Constructions," Proc. IEEE International Symposium Information Theory, 2011.
- N. Milosavljevic, S. Pawar, S. El Rouayheb, M. Gastpar, K. Ramchandran, "Deterministic Algorithm for the Cooperative Data Exchange Problem," Proc. IEEE International Symposium

Information Theory, 2011.

- S. Pawar, S. El Rouayheb, K. Ramchandran, “Securing Dynamic Distributed Storage Systems from Malicious Nodes,” Proc. IEEE International Symposium Information Theory, 2011.
- Venkatesan Ekambaram, Kannan Ramchandran and Raja Sengupta "Scaling Laws for Cooperative Node Localization in Non-Line-of-Sight Wireless Networks", IEEE Globecom 2011, Houston, Texas.
- Venkatesan Ekambaram, Christian Manasseh, Adam Goodliss, Raja Sengupta, Kannan Ramchandran, "A Systems Approach to Sizing of Co-operative High-Accuracy Location (C-HALO) Services Validated by Experiments in San Francisco", ION GNSS 2011, Portland, Oregon.
- Adam Goodliss, Christian Manasseh, Venkatesan Ekambaram, Raja Sengupta, Kannan Ramchandran, "Cooperative High-Accuracy Location (C-HALO) Service for Intelligent Transportation Systems: A Cost Benefit Study", ION GNSS 2011, Portland, Oregon.
- R. Venkataramanan, S. Tatikonda and K. Ramchandran, "Achievable Rates for Channels with Deletions and Insertions", Proc. IEEE International Symposium on Information Theory (ISIT), August 2011.
- R. Venkataramanan, S. Tatikonda and K. Ramchandran, "Bounds on the Optimal Rate for Synchronization from Insertions and Deletions", *Proc. of the Information Theory and Applications Workshop* , San Diego, February 2011.
- Ermin Kozica, Hao Zhang and Kannan Ramchandran, “Frame-Bufferless Sum-Rate Constrained Video Encoding Using Feedback,” IEEE International Conference on Image Processing (ICIP) 2010.
- Ramji Venkataramanan, Hao Zhang and Kannan Ramchandran, “Interactive Low-complexity Codes for Synchronization from Deletions and Insertions,” Allerton Conference on Communication, Control, and Computing, 2010.
- S. Pawar, S. El Rouayheb and K. Ramchandran, “On Secure Distributed Data Storage Under Repair Dynamics,” Proceedings of 2010 IEEE International Symposium on Information Theory (ISIT), Austin, June 2010 (student paper award finalist).
- N. B. Shah, K. V. Rashmi, P. V. Kumar, and K. Ramchandran, “Explicit Codes Minimizing Repair Bandwidth for Distributed Storage,” in Proc. IEEE Information Theory Workshop (ITW), Cairo, Jan. 2010.
- K. V. Rashmi, Nihar B. Shah, P. Vijay Kumar, and Kannan Ramchandran, "Explicit and Optimal Exact-Regenerating Codes for the Minimum-Bandwidth Point in Distributed Storage," IEEE International Symposium on Information Theory, Austin, Jun. 2010, pp. 1938-1942.
- K. V. Rashmi, N. B. Shah, P. V. Kumar, and K. Ramchandran, “Explicit Codes Uniformly Reducing Repair Bandwidth in Distributed Storage," National Conference on Communications, Chennai, Jan. 2010.
- N. B. Shah, K. V. Rashmi, P. V. Kumar and K. Ramchandran, "Interference Alignment as a Tool in Network Coding as Applied to Distributed Storage," National Conference on Communications, Chennai, Jan. 2010.
- N. B. Shah, K. V. Rashmi, P. V. Kumar and K. Ramchandran, "Regenerating Codes for Distributed Storage Networks," International Workshop on the Arithmetic of Finite Fields (WAIFI), Istanbul, Jun. 2010. (invited paper)
- K. V. Rashmi, N. B. Shah, P. V. Kumar, and K. Ramchandran, “Explicit and Optimal Codes for Distributed Storage," IEEE Information Theory and Applications (ITA) workshop, San Diego, Feb. 2010. (invited paper).
- Venkatesan Ekambaram, Kannan Ramchandran,"Distributed High Accuracy Peer-to-Peer Localization in Mobile Multipath Environments", IEEE Globecom 2010, Miami, Florida.
- N. Milosavljevic, M. Gastpar, and K. Ramchandran, “The Role of Game Theory in Key Agreement Over a Public Channel,” in Proceedings of International Symposium on Information Theory (ISIT), June 2010, pp. 2632 –2636.
- S. El Rouayheb and K. Ramchandran, Fractional Repetition Codes for Repair in Distributed Storage Systems,” Proceedings of 48th Annual Allerton Conference on Communication, Control and

Computation, Monticello, September 2010.

- S. El Rouayheb, V. Prabhakaran and K. Ramchandran, “Secure Distributed Storage of Decentralized Source Data, Can Interaction Help”, Proceedings of 2010 IEEE International Symposium on Information Theory (ISIT), Austin, June 2010.
- R. Venkataramanan, H. Zhang and K. Ramchandran, "Interactive Low-Complexity Codes for Synchronization from Deletions and Insertions", Proc. of the 48th Annual Allerton Conference(Monticello, IL) on Communication, Control and Computing, September 2010.
- Hao Zhang and Kannan Ramchandran,“A Reliable Decentralized Peer-to-Peer Video-on-Demand System Using Helpers,” Picture Coding Symposium (PCS), May, 2009.
- Hao Zhang Chuohao Yeo and Kannan Ramchandran, “Remote Video File Synchronization for Heterogeneous Mobile Clients,” SPIE Optical Engineering and Applications, Aug, 2009.
- Hao Zhang, Chuohao Yeo and Kannan Ramchandran, “Rate Efficient Remote Video File Synchronization,” IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), April, 2009.
- Hao Zhang, Chuohao Yeo and Kannan Ramchandran, “VSYNC --- A Novel Video File Synchronization Protocol,” ACM Multimedia, Oct, 2008: 757-760.
- K. V. Rashmi, N. B. Shah, P. V. Kumar, and K. Ramchandran, “Explicit Construction of Optimal Exact Regenerating Codes for Distributed Storage,” in Proc. 47th Annual Allerton Conference on Communication, Control, and Computing, Urbana-Champaign, Sep. 2009, pp. 1243–1249.
- N. Milosavljevic, M. Gastpar, and K. Ramchandran, “Secure Communication Using an Untrusted Relay via Sources and Channels,” in Proceedings of International Symposium on Information Theory (ISIT), July 2009, pp. 2457-2461.
- C. Yeo and K. Ramchandran, "On Low-Complexity Video Encoding through Feedback," in IEEE International Conference in Image Processing, 2009.
- C. Yeo, P. Ahammad, H. Zhang and K. Ramchandran, "Rate-constrained distributed distance testing and its applications," in IEEE International Conference on Acoustics, Speech, and Signal Processing, 2009.
- H. Zhang, C. Yeo and K. Ramchandran, "Rate efficient remote video file synchronization," in IEEE International Conference on Acoustics, Speech, and Signal Processing, 2009.
- A. Kumar, J. Rabaey, and K. Ramchandran, "SRAM supply-voltage scaling: a reliability perspective," Proceedings of the ISQED, San Jose, CA, Mar. 2009.
- Hao Zhang, Chuohao Yeo and Kannan Ramchandran, “VSYNC --- A Novel Video File Synchronization Protocol,” ACM Multimedia, Oct, 2008: 757-760
- V. M. Prabhakaran, K. Eswaran and K. Ramchandran, “Secrecy via Sources and Channels - A Secret Key - Secret Message Rate Trade-off Region,” in Proc. IEEE Symposium on Information Theory (ISIT), 2008.
- H. Zhang, C. Yeo and K. Ramchandran, "VSYNC - A video file synchronization protocol," in ACM Multimedia, 2008.
- C. Yeo, P. Ahammad and K. Ramchandran, "Rate-efficient visual correspondences using random projections," in IEEE International Conference in Image Processing, 2008.
- C. Yeo, P. Ahammad and K. Ramchandran, "A rate-efficient approach for establishing visual correspondences via distributed source coding," in SPIE Visual Communications and Image Processing, 2008.
- A. Kumar, H. Qin, P. Ishwar, J. Rabaey, and K. Ramchandran, “Fundamental data retention limits in SRAM standby experimental results,” Proc. 9th IEEE International Symposium on Quality Electronic Design (ISQED), San Jose, CA, 17-19 Mar. 2008, pp. 92-97.
- H. Qin, A. Kumar, K. Ramchandran, J. Rabaey, and P. Ishwar, “Error-tolerant SRAM design for ultra-low power standby operation,” Proc. 9th IEEE International Symposium on Quality Electronic Design (ISQED), San Jose, CA, 17-19 Mar. 2008, pp. 30-34.

- A. Kumar, H. Qin, P. Ishwar, J. Rabaey, and K. Ramchandran, "Fundamental data retention limits in SRAM standby - Experimental results," Proceedings of the ISQED, San Jose, CA, Mar. 2008.
- H. Qin, A. Kumar, P. Ishwar, J. Rabaey, and K. Ramchandran, "Error-tolerant SRAM design for ultra-low power standby operation," Proceedings of the ISQED, San Jose, CA, Mar. 2008.
- A. G. Dimakis, J. Wang and K. Ramchandran, "Unequal Growth Codes: Intermediate Performance and Unequal Error Protection for Video Streaming," International workshop on Multimedia Signal Processing. (MMSP) October 2007. (Best student paper runner-up.)
- Y. Wu, A. G. Dimakis and K. Ramchandran, "Deterministic Regenerating Codes for Distributed Storage," Forty-Fifth Annual Allerton Conference, September 2007.
- A. G. Dimakis, M.J. Wainwright and K. Ramchandran, "Lower Bounds on the Rate-Distortion Function of LDGM Codes," Information Theory Workshop (ITW) 2007.
- A. G. Dimakis, P. B. Godfrey, M. J. Wainwright and K. Ramchandran "Network Coding for Distributed Storage Systems," IEEE Conference on Computer Communications. (INFOCOM), May 2007.
- A. G. Dimakis, P. B. Godfrey, M. J. Wainwright and K. Ramchandran, "On the Benefits of Network Coding for Peer-to-Peer Storage, "Third Workshop on Network Coding, Theory, and Applications (NETCOD), January 2007.
- V. M. Prabhakaran and K. Ramchandran, "A Separation Result for Secure Communication," in Proc. Allerton Conference, 2007.
- V. M. Prabhakaran and K. Ramchandran, "On Secure Distributed Source Coding," in Proc. IEEE Information Theory Workshop (ITW), Lake Tahoe, 2007.
- V. M. Prabhakaran, D. Tse, and K. Ramchandran, "Channel Coding with Strictly-Causal Colored Side-Information at the Transmitter," in Proc. IEEE Symposium on Information Theory (ISIT), 2007.
- J. Wang, C. Yeo, V. M. Prabhakaran, and K. Ramchandran, "On the Role of Helpers in Peer-to- Peer File Download Systems: Design, Analysis and Simulation," Proc. International Workshop on Peer-to-Peer Systems (IPTPS), 2007.
- P. Ahammad, C. Yeo, K. Ramchandran and S. S. Sastry, "Unsupervised discovery of action hierarchies in large collections of activity videos," in IEEE International Workshop on Multimedia Signal Processing, 2007.
- H. Hung, D. Jayagopi, C. Yeo, G. Friedland, S. Ba, J.-M. Odobez, K. Ramchandran, N. Mirghafori and D. Gatica-Perez, "Using audio and video features to classify the most dominant person in a group meeting," in ACM Multimedia, 2007.
- C. Yeo, J. Wang and K. Ramchandran, "View synthesis for robust distributed video compression in wireless camera networks," in IEEE International Conference in Image Processing, 2007.
- D. Schonberg, C. Yeo, S. Draper and K. Ramchandran, "On compression of encrypted video," in Data Compression Conference, 2007.
- C. Yeo and K. Ramchandran, "Robust distributed multiview video compression for wireless camera networks," in SPIE Visual Communications and Image Processing, 2007.
- A. Kumar, H. Qin, P. Ishwar, J. Rabaey, and K. Ramchandran, " Fundamental bounds on power reduction during data-retention in standby SRAM," Proc. IEEE International Symposium on Circuits and Systems (ISCAS), New Orleans, LA, 27-30 May, 2007, pp. 1867-1870.
- A. Kumar, H. Qin, P. Ishwar, J. Rabaey, and K. Ramchandran, "Fundamental redundancy versus power trade-off in standby SRAM," Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Honolulu, Hawaii, 15-20 Apr., 2007, pp,II-85-II-88.
- A. Kumar, H. Qin, P. Ishwar, J. Rabaey, and K. Ramchandran, "Fundamental bounds on power reduction during data-retention in standby SRAM," Proceedings of the IEEE ISCAS, New Orleans, NC, May 2007.
- A. Kumar, H. Qin, P. Ishwar, J. Rabaey, and K. Ramchandran, "Fundamental redundancy versus power trade-off in standby SRAM," Proceedings of the IEEE ICASSP, Honolulu, HI, Apr. 2007.

- A. G. Dimakis, D. Petrovic ,K. Ramchandran, " From Dumb Wireless Sensors to Smart Networks using Network Coding," Information Theory and Applications (ITA) San Diego, 2006.
- A. G. Dimakis, V. Prabhakaran, K. Ramchandran "Distributed Fountain Codes for Networked Storage," IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) May 2006.
- J. Wang, V. M. Prabhakaran, and K. Ramchandran, "Syndrome-based Robust Video Transmission Over Networks with Bursty Losses," Proc. International Conference on Image Processing (ICIP), 2006.
- P. Ishwar, V. M. Prabhakaran, and K. Ramchandran, "On Source Encoding with Side- information Under Ambiguous State of Nature," Proc. IEEE Symposium on Information Theory (ISIT), 2006
- A. Dimakis, V. M. Prabhakaran, and K. Ramchandran, "Distributed Fountain Codes for Net- worked Storage," in Proc. International Conference on Acoustics, Speech, and Signal Processing (ICASSP), 2006.
- C. Yeo, P. Ahammad, K. Ramchandran and S. S. Sastry, "Compressed Domain Real-time Action Recognition," in IEEE International Workshop on Multimedia Signal Processing, 2006.
- P. Ishwar, V. Prabhakaran, and K. Ramchandran, ``On source encoding with side-information under ambiguous state of nature," in Proc. 2006 IEEE International Symposium on Information Theory (ISIT), Seattle, WA, 9-14 Jul. 2006 , pp. 479-483.
- Daniel Hazen, Rohit Puri and Kannan Ramchandran, "Multi-camera Video Resolution Enhancement by Fusion of Spatial Disparity and Temporal Motion Fields", IEEE International Conference on Computer Vision Systems, New York City, NY, January 2006.
- A. K. Fletcher, S. Rangan, V. K. Goyal, and K. Ramchandran, "Causal and Strictly Causal Estimation for Jump Linear Systems: An LMI Analysis," Proc. Conf. Information Sciences & Systems 2006 (Princeton, NJ, March 22–24), pp. 1302–1307.
- A. G. Dimakis, V. Prabhakaran, K. Ramchandran, "Ubiquitus Access to Distributed Data in Large-Scale Sensor Networks Through Decentralized Erasure Codes," IEEE/ACM Symposium on Information Processing in Sensor Networks (IPSN). 2005, Best Paper Award.
- V. M. Prabhakaran, R. Puri, and K. Ramchandran, "Hybrid Digital-Analog Strategies for Source-Channel Broadcast," in Proc. Allerton Conference, 2005.
- A. Dimakis, V. M. Prabhakaran, and K. Ramchandran, "Ubiquitous Access to Distributed Data in Large-Scale Sensor Networks through Decentralized Erasure Codes," in Proc. Symposium on Information Processing in Sensor Network (IPSN), 2005.
- A. Majumdar, R. Puri, P. Ishwar and K. Ramchandran, "Complexity/performance trade-offs for robust distributed video coding," in Proc. IEEE International Conference on Image Processing(ICIP), Genova, Italy, 11-14 Sep., 2005, vol. 2, pp. 678-681. [Invited paper in special session on distributed video coding]
- P. Ishwar, R. Puri, A. Majumdar, and K. Ramchandran, ``Analysis of motion-complexity and robustness for video transmission," in Proc. IEEE CommSoc/TCCC International Conference on Wireless Networks, Communications, and Mobile Computing (Wirelesscom), Maui, HI, 13-16 Jun., 2005, vol. 2, pp. 1261-1265.
- S. Draper, P. Ishwar, D. Molnar, V. Prabhakaran, K. Ramchandran, D. Schonberg, and D. Wagner, ``An evaluation of PMF-based tests for detection of least significant bit image steganography," in Proc. 7th International Workshop on Information Hiding (IH), Barcelona, Spain, 6-8 Jun., 2005, pp. 327-341.
- Petrović, K. Ramchandran, J. Rabaey, "Coding for Sensor Networks Using Untuned Radios," IEEE Workshop on Signal Processing Advances in Wireless Communications (SPAWC) 2005.
- D. Petrović, K. Ramchandran,J.Rabaey, "Overcoming Unreliable Radios in Sensor Networks with Network Coding," IEEE Workshop on Network Coding, Theory and Applications (NetCod) 2005.
- Abhik Majumdar, Rohit Puri, Prakash Ishwar, and Kannan Ramchandran, "Complexity/Performance trade-offs for robust distributed video coding", International Conference On Image Processing (ICIP),

Genova, Italy, Sept. 2005.

- Jiajun Wang, Abhik Majumdar, and Kannan Ramchandran, International Conference on Acoustics, Speech, and Signal Processing (ICASSP), “Enhancing MPEG video broadcast over wireless networks with an Auxiliary Broadcast Channel”, Philadelphia, PA, Mar. 2005.
- D. Schonberg, S. C. Draper, and K. Ramchandran, "On compression of encrypted images," IEEE Int. Conf. Image Proc., Oct. 2006, pp. 269-272.
- S. C. Draper, K. Ramchandran, B. Rimoldi, A. Sahai, and D. N. C. Tse, "Attaining maximal reliability with minimal feedback via joint channel-code and hash-function design," Allerton Conf. on Comm., Control, and Computing, Monticello IL, Sep. 2005.
- D. Schonberg, S. C. Draper, R. Puri, and K. Ramchandran, "Designing Slepian-Wolf codes for vector source / side-information problems," Allerton Conf. on Comm., Control, and Computing, Monticello IL, Sep. 2005.
- D. Schonberg, S. C. Draper, and K. Ramchandran, "Blind encryption of encrypted data approaching the source entropy rate of sources with memory," Allerton Conf. on Comm., Control, and Comput, Monticello IL, Sep. 2005.
- D. Schonberg, S. C. Draper, and K. Ramchandran, "Blind encryption of encrypted data approaching the source entropy rate," European Signal Processing Conf., Antalya, Turkey, Sep. 2005.
- S. C. Draper, P. Ishwar, D. Molnar, V. Prabhakaran, K. Ramchandran, and D. Wagner, "An analysis of empirical PMF based tests for least significant bit image steganography," Inform. Hiding Workshop, Spain, Jun. 2005.
- Kannan Ramchandran, Rohit Puri, Abhik Majumdar, Jiajun Wang, and Marco Tagliasacchi, “Video coding based on distributed source coding principles”, Workshop for future directions in video compression, 72nd MPEG meeting, April 20th 2005, Busan, Korea.
- Kannan Ramchandran, Rohit Puri, Abhik Majumdar, Jiajun Wang, and Marco Tagliasacchi, “ PRISM: Video coding based on motion compensation at decoder”, Response to Call for Contributions for workshop for future directions in video compression, 74nd MPEG meeting, October 16th 2005, Nice, France.
- Rohit Puri, Vinod M. Prabhakaran and Kannan Ramchandran, “A Hybrid Analog-Digital Framework for Source-Channel Broadcast”, Conference on Information Sciences and Systems, Baltimore, MD, March 2005.
- Prakash Ishwar, Rohit Puri, Abhik Majumdar, and Kannan Ramchandran, “Analysis of Motion-complexity and Robustness for Video Transmission”, International Symposium on Multimedia over Wireless (ISMW), Maui, Hawaii, June 2005.
- Abhik Majumdar, Rohit Puri, Prakash Ishwar and Kannan Ramchandran, “Complexity-Performance Trade-offs for Robust Distributed Video Coding”, International Conference on Image Processing (ICIP), Genoa, Italy, September 2005.
- Daniel Schonberg, Stark C. Draper, Rohit Puri, and Kannan Ramchandran, “. Slepian-Wolf Codes for Parallel Sources: Design and Error Exponent Analysis”, 43rd Allerton Conference on Communication, Control and Computing, Allerton, IL, September 2005.
- Vinod M. Prabhakaran, Rohit Puri and Kannan Ramchandran, “Hybrid Analog-Digital Strategies for Source-Channel Broadcast”, 43rd Allerton Conference on Communication, Control and Computing, Allerton, IL, September 2005.
- A. K. Fletcher, S. Rangan, V. K. Goyal, and K. Ramchandran, “Analysis of Denoising by Sparse Approximation with Random Frame Asymptotics,” Proc. IEEE Int. Symp. on Information Theory 2005 (Adelaide, September 4–9), pp. 1706–1710.
- A. G. Dimakis, V. Prabhakaran, K. Ramchandran, “Distributed Data Storage in Sensor Networks using Decentralized Erasure Codes,” Asilomar Conference on Signals, Systems, and Computers, November 2004.
- V. M. Prabhakaran, K. Ramchandran, and D. Tse, “On the Role of Interaction Between Sensors in the CEO Problem,” in Proc. Allerton Conference, 2004.

- V. M.Prabhakaran, D. Tse, and K. Ramchandran, “Rate Region of the Quadratic Gaussian CEO Problem,” in Proc. IEEE Symposium on Information Theory (ISIT), 2004.
- P. Ishwar and K. Ramchandran, ``On decoder-latency versus performance tradeoffs in differential predictive coding," in Proc. IEEE International Conference on Image Processing (ICIP), Singapore, 24-27 Oct., 2004, vol. 2, pp. 1097-1100.
- A. Kumar, P. Ishwar, and K. Ramchandran, ``On distributed sampling of bandlimited and smooth non-bandlimited sensor fields," in Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Montreal, Canada, 17-21 May, 2004, vol. 3, pp. 925-928. [Invited paper in the special session on distributed digital signal processing for sensor networking]
- P. Ishwar, V. M. Prabhakaran, and K. Ramchandran, ``Compressing encrypted sources using side-information coding," in Proc. IEEE International Symposium on Information Theory (ISIT), Chicago, IL, 27 Jun. - 2 A.
- Jana van Greunen, Dragan Petrović, Alvise Bonivento, Jan Rabaey, Kannan Ramchandran, and Alberto Sangiovanni-Vincentelli, "Adaptive Sleep Discipline for Energy Conservation and Robustness in Dense Sensor Networks ", IEEE International Communications Conference (ICC) 2004.
- Marco Tagliasacchi, Abhik Majumdar, and Kannan Ramchandran, “Distributed-Source-Coding based Robust Spatio-Temporal Scalable Video Codec”, Picture Coding Symposium (PCS), San Francisco, CA, Dec. 2004.
- A. Majumdar and Kannan Ramchandran, “Video Multicast over Lossy Channels based on Distributed Source Coding,” International Conference on Image Processing (ICIP), Singapore, Oct. 2004.
- A. Majumdar, Jiajun Wang, Kannan Ramchandran, and Harinath Garudadri, “Drift Reduction in Predictive Video Transmission using a Distributed Source Coded Side-Channel,” ACM Multimedia, New York, N.Y. Oct. 2004.
- 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.
- A. K. Fletcher, S. Rangan, V. K. Goyal, and K. Ramchandran, “Optimized Filtering and Reconstruction in Predictive Quantization with Losses,” Proc. IEEE Int. Conf. Image Processing 2004 (Singapore, October 24–27), vol. 5, pp. 3245–3248.
- A. K. Fletcher, S. Rangan, V. K. Goyal, K. Ramchandran, “Robust Predictive Quantization: A New Design and Optimization Methodology,” Proc. IEEE Int. Symp. Information Theory 2004 (Chicago, IL, June 27–July 2), p. 427.
- P. Ishwar, V. M. Prabhakaran, and K. Ramchandran, “Towards a Theory for Video Coding using Distributed Compression Principles,” in Proc. International Conference on Image Processing (ICIP), 2003.
- P. Ishwar, V. M. Prabhakaran, and K. Ramchandran, ``On joint classification and compression in a distributed source coding framework," in Proc. IEEE Statistical Signal Processing (SSP) Workshop, St. Louis, MO, 28 Sep. - 1 Oct., 2003, pp. 34-37. [Invited paper in the special session on compression for sensor networks]
- P. Ishwar, A. Kumar, and K. Ramchandran, ``On distributed sampling in dense sensor networks: a ``bit-conservation" principle," in Proc. 41st Annual Allerton Conference on Communication, Control, and Computing, Monticello, IL, 1-3 Oct. 2003, pp. 80-89. [Invited paper in special session on wireless ad-hoc and sensor networks]
- P. Ishwar, R. Puri, S. S. Pradhan, and K. Ramchandran, ``On compression for robust estimation in sensor networks," in Proc. IEEE International Symposium on Information Theory (ISIT), Yokohama, Japan, 29 Jun. - 4 Jul., 2003, page 193.
- D. Petrović, R.C. Shah, K. Ramchandran, J. Rabaey, “Data Funneling: Routing with aggregation and compression for wireless sensor networks,” IEEE International Communications Conference (ICC) 2003.

- J.Chou, D. Petrović, K. Ramchandran, “A Distributed and Adaptive Signal Processing Approach to Reducing Energy Consumption in Sensnor Networks,” IEEE Infocom 2003.
- A. Majumdar, J. Chou, and K. Ramchandran, "Robust Distributed Video Compression based on Multilevel Coset Codes," in Proc. Asilomar, Nov. 2003.
- J. Chou, D. Petrovic and K. Ramchandran, “ A distributed and adaptive signal processing approach to reducing energy consumption in sensor networks”, *Proc. of the Conference on Computer Communications (INFOCOM)*, San Francisco, CA, April 2003.
- J. Chou, S. S. Pradhan and K. Ramchandran. “ Turbo and trellis-based constructions for source coding with side information”, *Proc. of the Data Compression Conference (DCC), Snowbird, UT, March 2003.*
- J. Chou, K. Ramchandran, D. Sachs and D. Jones, **“** Audio data hiding with application to surround sound”, Proc. of International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Hong Kong, April 2003.
- Rohit Puri and Kannan Ramchandran, “PRISM: An Uplink-Friendly Multimedia Coding Paradigm”, IEEE International Conference on Acoustics, Speech and Signal Processing, Hong Kong, April 2003.
- A. K. Fletcher and K. Ramchandran, “Estimation Error Bounds for Denoising by Sparse Approximation,” Proc. IEEE Int. Conf. Image Processing 2003 (Barcelona, Spain, September 14–17), vol. 1, pp. 113–116.
- A. K. Fletcher, V. K. Goyal, and K. Ramchandran, “Iterative Projective Wavelet Methods for Denoising,” Proc. Wavelets X: Applications in Signal & Image Processing, part of SPIE Int.Symp. on Optical Science & Technology 2003 (San Diego, CA, August 3–8), vol. 5207, pp.9–15.
- A. K. Fletcher and K. Ramchandran, “Estimation Bounds for Frame Denoising,” Proc. Wavelets X: Applications in Signal & Image Processing, part of SPIE Int. Symp. on Optical Science & Technology 2003 (San Diego, CA, August 3–8), vol. 5207, pp. 40–46.
- Prakash Ishwar, Rohit Puri, S. Sandeep Pradhan and Kannan Ramchandran, “On Rate-Constrained Estimation in Unreliable Sensor Networks”, IEEE International Workshop on Information Processing in Sensor Networks, Palo Alto, CA, April 2003.
- Prakash Ishwar, Rohit Puri, S. Sandeep Pradhan and Kannan Ramchandran, “Prakash Ishwar, Rohit Puri, S. Sandeep Pradhan and Kannan Ramchandran”, IEEE International Symposium on Information Theory (ISIT), Yokohama, Japan, July 2003.
- Rohit Puri and Kannan Ramchandran, PRISM: A “Reversed” Multimedia Coding Paradigm”, International Conference on Image Processing (ICIP), Barcelona, Spain, September 2003.
- R. Puri, P. Ishwar, S. S. Pradhan, and K. Ramchandran, ``Rate-constrained robust estimation for unreliable sensor networks," in Proc. Thirty-Sixth Annual Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, CA, 3-6 Nov., 2002, vol. 1, pp. 235239.
- J.Chou, D. Petrović, K. Ramchandran,“Tracking and Exploiting Correlations in Dense Sensor Networks,” *IEEE Asilomar Conference on Signals, Systems, and Computers 2002*.
- Abhik Majumdar, Rohit Puri and Kannan Ramchandran, “Distributed Multimedia Transmission from Multiple Servers,” International Conference on Image Processing (ICIP), Rochester, New York, Sept 2002.
- Abhik Majumdar, Rohit Puri, Kannan Ramchandran and Igor Kozintsev, “Robust Video Multicast under Rate and Channel Variability with Applications to Wireless LANs,” ISCAS 2002, Scottsdale, AZ, May 2002.
- J. Chou and K. Ramchandran, “ Robust turbo-based data hiding for image and video sources”, Proceedings 2002 IEEE International Conference on Multimedia and Expo. IEEE. Part vol.2, 2002, pp.565-8 vol.2. Piscataway, NJ, USA.
- J. Chou and K. Ramchandran, “ Robust turbo-based data hiding for image and video sources”, Proc. of International Conference on Image Processing, Rochester, NY, September 2002.
- J. Chou, K. Ramchandran and Pradhan SS, “Turbo-coded trellis-based constructions for data hiding”, SPIE-Int. Soc. Opt. Eng. Proceedings of Spie - the International Society for Optical Engineering,

vol.4675, 2002, pp.399-408. USA.

- S. Pradhan, J. Chou, and K. Ramchandran, " A characterization of functional duality between source and channel coding" , Proceedings of International Symposium on Information Theory (ISIT), Lausanne, Switzerland, June 2002.
- Rohit Puri, S. Sandeep Pradhan and Kannan Ramchandran, "n-Channel Multiple Descriptions: Theory and Constructions", Data Compression Conference (DCC), Snowbird, UT, April 2002.
- Sergio Servetto, Rohit Puri, Jean-Paul Wagner, Pierre Scholtes and Martin Vetterli, "Video Multicast in (Large) Local Area Networks", IEEE INFOCOM 2002, New York City, NY, June 2002
- Rohit Puri, S. Sandeep Pradhan and Kannan Ramchandran, "n-Channel Symmetric Multiple Descriptions: New Rate Regions", International Symposium on Information Theory (ISIT), Lausanne, Switzerland, July 2002.
- Abhik Majumdar, Rohit Puri and Kannan Ramchandran, "Rate-Distortion Efficient Video Transmission from Multiple Servers", International Conference on Multimedia and Expo (ICME), Lausanne, Switzerland, August 2002.
- 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.
- Abhik Majumdar, Rohit Puri and Kannan Ramchandran, " Distributed Multimedia Transmission from Multiple Servers", International Conference on Image Processing (ICIP), Rochester, NY, September 2002.
- Rohit Puri and Kannan Ramchandran, ". PRISM: A New Robust Video Coding Architecture Based on Distributed Compression Principles", 40th Allerton Conference on Communication, Control and Computing, Allerton, IL, October 2002.
- Rohit Puri, Kannan Ramchandran and S. Sandeep Pradhan, "On Seamless Digital Upgrade of Analog Transmission Systems using Coding with Side Information", 40th Allerton Conference on Communication, Control and Computing, Allerton, IL, October 2002.
- Rohit Puri, Prakash Ishwar, S. Sandeep Pradhan and Kannan Ramchandran, "Rate-Constrained Robust Estimation for Unreliable Sensor Networks", 36th Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, CA, November 2002.
- 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.
- 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.
- A. K. Fletcher and K. Ramchandran, "Wavelet Denoising by Recursive Cycle Spinning," Proc. IEEE Int. Conf. Image Processing 2002 (Rochester, NY, September 22–25), vol. 2, pp. 873–876.