

KANNAN RAMCHANDRAN

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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.

- 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 sensor networks:

- a "bit-observation 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 Exchange Problem 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 Arbor, 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

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