PETER J. RAMADGE

Gordon Y. S. Wu Professor of Engineering
Professor of Electrical Engineering
Princeton University
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AWARDS AND HONORS

- Gordon Y. S. Wu Professor of Engineering, Princeton University.
- Paper included in: *Control Theory: Twenty Five Seminal Papers (1932-1981),* IEEE Press (2001).
- Listed in ISIHighlyCited.com .
- Fellow of the IEEE (1995).
- Outstanding Paper Award, IEEE Control Systems Society (1980).
- Convocation Medal for Professional Excellence, University of Newcastle, Australia (1991).
- NCR Corporation Award for Excellence in Teaching (1989).
- Engineering Council Teaching Award, School of Engineering, Princeton University (1988).
- Walter C. Johnson Prize for Teaching Excellence, Depart. Elect. Eng., Princeton University (1988).
- IBM Faculty Development Award (1987-88).
- National Science Foundation Research Initiation Grant (1985).
- Outstanding Teaching Assistant Award, Depart. Elect. Eng., University of Toronto (1983).
- Canadian Commonwealth Postgraduate Scholarship (1979).
- Institute of Engineers (Aust.) Medal (1978).
- University Medal, Newcastle University, Newcastle, Australia (1978).

APPOINTMENTS

• Professor	Princeton University, Electrical Engineering	7/1/95 - present
• Department Chair	Princeton University, Electrical Engineering	7/1/01 - 7/1/12
• Associate Chair	Princeton University, Electrical Engineering	7/1/00 - 30/6/01
• Affiliated faculty member	Program in Applied and Computational Mathematics	1/5/06 - present
• Visiting Professor	MIT, Electrical. Engineering & Comp. Science	2/1/94 - 5/31/94
• Associate Professor	Princeton University, Electrical Engineering	7/1/90 - 7/1/95
• Assistant Professor	Princeton University, Electrical Engineering	9/1/84 - 7/1/90
• Postdoctoral Research Fellow	University of Toronto, Electrical Engineering	6/1/83 - 8/30/84
• Graduate Teaching Assistant	University of Toronto, Electrical Engineering	9/1/83 - 12/20/83
• Part -Time Lecturer	University of Newcastle, Elect. Eng., Australia	2/1/78 - 6/15/78

EXPERIENCE

Research

- Statistical signal processing and machine learning and various applications, including: data analysis, classification, prediction, medical and fMRI imaging, video and image processing.
- On-line optimization of stochastic systems, and adaptive (learning) control.
- Hybrid systems, discrete-event systems.

Teaching

Undergraduate courses: (past 10 years) Image Processing (ELE 488); Designing Real Systems (ELE 301, module 4: feedback control); fMRI Decoding: Reading Minds Using Brain Scans (ELE/NEU/PSY 480); Introduction to Engineering (EGR 194); Signals and Systems (ELE 301); Elements of Modern Technology (ELE 222), MATLAB Short Course.
Graduate courses: (past 10 years) Machine Learning and Pattern Recognition (ELE 535); Linear Systems (ELE 521), Estimation and Detection (ELE 530), Nonlinear Systems (ELE 523).

Administration

- *Department*:
  - Faculty Hiring Committee 2013-14, 2014-15, 2015-16, 2016-17.
  - Director of Graduate Studies 1990-93, 2014-15, 2015-16, 2016-17.
  - Department Chair, 2001-2012.
  - Department Associate Chair, 2000-01.
  - Chair of the Faculty Hiring Committee, 2000-2001.
  - Chair of the General Exam Committee 1999-2001.
  - Department Strategic Planning Committee 1998-1999, 2004-2005, 2013-2014.
  - Undergraduate Representative 1995-1997.
- *Engineering School:*
  - Co-Chair, SEAS Self-Study Committee on Dept. Structures and Research Priorities. 2014-15
  - Dean's Executive Committee 2001- 2012.
  - Associate Dean Search Committee 2007.
  - Wu Fellowship Committee 1998-00.
- *Princeton University:*
  - Executive Committee, Center for Statistics and Machine Learning, 2016-17.
  - The Committee on Committees, 2014-15, 2015-16, 2016-17
  - The President's Faculty Advisory Committee on Appointments and Advancements 2004-05, 2007-08.
  - Policy Subcommittee of the Graduate School, 2014-15, 2015-16.
  - Committee member, Program in Neuroscience, 2007-08.
  - Princeton Rhodes Committee 1998-2000.
  - Graduate Fellowship Subcommittee of the Graduate School.
  - University Committee on the Course of Study.

EDUCATION

Ph.D. (Electrical Engineering)	1983	University of Toronto, Canada
M.E. (Electrical Engineering)	1980	Newcastle University, Australia
B.Sc./B.E. (Electrical Engineering)	1978	Newcastle University, Australia
Honors Class I and University Medal		

SELECTED INVITED TALKS AND SEMINARS

- Philips Research Lab, Briar Cliff Manor, NY: Probabilistic Hyperalignment of fMRI Data, Nov., 2014.
- Rutgers ECE Colloquium, Sparse Representation Classification via Sequential Lasso Screening, October 30, 2013.
- NSF CRCNS PI meeting, McGovern Institute for Brain Research, MIT, "Inter-subject alignment and the dynamics of visual attention" (joint talk with Michael Hanke), June 2013.
- Boston University, "Efficiently learning sparse representations", March 2012.
- University of Michigan, "Cortical functional alignment", March 2008.
- University of Newcastle, "Advanced signal processing for fMRI analysis," June 2008.
- Telcordia, "Image and Video Fusion with Selected Applications," November 2004.
- Dept. Electrical Engineering and Computer Science, University of Michigan, Lucent Distinguished Lecture Series on Information Technology and Science, April 8, 2004.

SELECTED CONFERENCE AND WORKSHOP PARTICIPATION

- Advances in Neural Information Processing Systems (NIPS), Barcelona, Dec. 2016. Posters presented at two workshops by two of my students.
- Advances in Neural Information Processing Systems (NIPS), Montreal, Dec., 2015.
- Advances in Neural Information Processing Systems (NIPS), Montreal, Dec., 2014: 4th NIPS Workshop on Machine Learning and Interpretation in Neuroimaging: Beyond the Scanner (talk on our joint work given by student Po-Hsuan Chen).
- IEEE Conference of Decision and Control, Los Angeles, Dec., 2014.
- IEEE Conf. on Acoustics, Speech and Signal Processing, Florence, May 2014.
- NSF CRCNS Annual PI Meeting, McGovern Institute for Brain Research, June 2013.

- IEEE Int. Conf. on Acoustics, Speech and Signal Processing, Vancouver, May 2013.
- Advances in Neural Information Processing Systems (NIPS), Lake Tahoe, NV, Dec. 2012.
- IEEE Statistical Signal Processing Workshop, Ann Arbor MI, Aug. 2012.
- International Conference on Machine Learning (ICML), Edinburgh, July 2012.
- IEEE Int. Conf. on Acoustics, Speech and Signal Processing (ICASSP), Kyoto Japan, March 2012.
- Advances in Neural Information Processing Systems (NIPS), Granada, Spain, Dec. 2011.
- IEEE Int. Conf. on Image Processing (ICIP), Brussels, Belgium, Sept. 2011.
- Advances in Neural Information Processing Systems (NIPS), Vancouver, Canada, Dec. 2009.
- 15th Annual Human Brain Mapping Conference, San Francisco, June 2009.
- IEEE Int. Conf. on Acoustics, Speech and Signal Processing (ICASSP), Taipei Taiwan, April 2009.
- Advances Neural Information Processing Systems (NIPS), Vancouver, Canada, Dec. 2008.

- **CONSULTING**
- Iomega, 1999-2001, 35 days.
- Visiting Research Scientist, IBM Tokyo Research Laboratory, 3 days, Nov., 1999.
- Iomega, 1998, 20 days.
- Visiting Research Scientist, IBM Tokyo Research Laboratory, 5 days, August 1997.
- Math Center, AT&T Bell Laboratories, Murray Hill, New Jersey. Consulting on protocol analysis and synthesis. 9 days, July-August, 1988.

SELECTED PROFESSIONAL ACTIVITIES
- IEEE Fellow Committee: 2014, 2015, 2016.
- Reviewer: NIPS 2012, 2013, 2014; ICASSP 2013, 2014, 2015, 2016.
- National Science Foundation Proposal Review Panel: April 2012, March 2013, Feb, 2014, May 2015.
- Program Committee: 2012 IEEE Machine Learning for Signal Processing Workshop.
- Faculty Hiring Committee, Information Sciences, KAUST, May 2010.
- Chair, Proposal Review Committee for the Stuart M. Essig ’83 and Erin S. Enright ’82 Fund for Innovation in Engineering and Neuroscience and the J. Insley Blair Pyne Fund, Princeton University, April 2010.
- Chair, Proposal Review Committee, KAUST Global Collaborative Research Funding Program and the University of Michigan, March, 2010.
- George S. Axelby Outstanding Paper Award Committee, IEEE Control Systems Society, 2002, 2006.
- American Automatic Control Council John Ragazzini Education Award Committee, 2003.

GRADUATE STUDENTS
- Christian Golaszewski, Ph.D., 1989. (Germany)
- L. Serrano, Ph.D., August 1990. (IBM)
- Edwin Chong, Ph.D., June 1991. (Colorado State)
- Christopher Chase, Ph.D., Sept. 1991. (AT&T, Austin)
- Charlie Horn, C., Ph.D., 1995. (Thomson)
- L. Zhang, Ph.D., 1995 (IBM)
- Yap Peng Tan, Ph.D., 1997 (Nanyang Technological University)
- Q. Zhang, M.S.E., Sept. 2000. (Panasonic)
- Richard Radke, Ph.D., 2001. (NSF Fellow and Wu Fellow) (RPI).
- Vitali Zagronodov, Ph.D., 2003 (Nanyang Technological University.)
- Audrey Ja-Chin Lee Ph.D. (joint with Valerie Thomas & David I. Feinstein), 2005.
- Mert Rory Sabunco, Ph.D., 2006. (Martinos Center for Biological Imaging, MGH and Harvard Medical School.)
- Shannon Hughes, Ph.D., 2008 (with Ingrid Daubechies), (NSF Fellow and Wu Fellow) (Univ. Colorado, ECEE).
- Bryan Conroy, Ph.D., 2010. (Philips Medical Research).
- Eugene Brevdo, Ph.D., 2011 (NSF and NDSEG Fellow) (with Ingrid Daubechies) (Google).
- Yongxin Taylor Xi, Ph.D., 2011 (Wu Prize) (Yahoo).

- Zhen James Xiang, Ph.D. 2007-2012 (Upton Fellow, Qualcomm Innovation Fellowship Finalist, Charlotte Elizabeth Proctor Honorific Fellowship Princeton University) (Citadel).
- Alex Lorbert, Ph.D., 2007-2012. (Superfish)
- David Eis, Ph.D., 2008-2014 (Bloomberg)
- Hao Xu, Ph.D., 2008-2013 (Qualcomm Innovation Fellowship Finalist) (Google).
- Pingmei Xu, M.A., 2010-2013 (Google).
- Xu Chen, Ph.D., 2010-2015 (Chateaubriand Fellowship, 1 year with Stephane Mallat at ENS) (Google)
- Yun Wang Ph.D., 2011-2015 (Amazon)
- Cameron Po-Hsuan Chen, Ph.D., 2012-
- Hossein Valavi, Ph.D., 2014-
- Hejia Zhang, Ph.D., 2013-

POSTDOCS

- Judith Hocherman, Ph.D. Technion, 1994.

PUBLICATIONS

1) Carolyn L. Chen, Jeffrey O. Snyder, Peter J. Ramadge, Learning to Identify Container Contents Through Tactile Vibration Signatures, Proc. 2016 IEEE Int. Conf. on Simulation, Modeling, and Programming for Autonomous Robots, Dec 13-16, 2016. [**Selected as one of the top seven papers at the conference**].
2) Hejia Zhang, Po-Hsuan Chen, Janice Chen, Xia Zhu, Javier S. Turek, Theodore L. Willke, Uri Hasson, Peter J. Ramadge, A Searchlight Factor Model Approach for Locating Shared Information in Multi-Subject fMRI Analysis, Sept 2016. arXiv:1609.09432 [stat.ML]
3) Michael J. Anderson, Mihai Capota, Javier S. Turek, Xia Zhu, Theodore L. Willke, Yida Wang, Po-Hsuan Chen, Jeremy R. Manning, Peter J. Ramadge, Kenneth A. Norman. Enabling Factor Analysis on Thousand-Subject Neuroimaging Datasets, Aug 2016. arXiv:1608.04647 [stat.ML]
4) Po-Hsuan Chen, Xia Zhu, Hejia Zhang, Javier S. Turek, Janice Chen, Theodore L. Willke, Uri Hasson, Peter J. Ramadge, A Convolutional Autoencoder for Multi-Subject fMRI Data Aggregation, Department of Electrical Engineering, Princeton University, June 2016. arXiv:1608.04846 [stat.ML].
5) Zhen James Xiang, Yun Wang, Peter J. Ramadge, Screening Tests for Lasso Problems, *IEEE Trans. Pattern Analysis and Machine Intelligence*, 12 May, 2016, DOI: 10.1109/TPAMI.2016.2568185.
6) J. Swaroop Guntupalli, Michael Hanke, Yaroslav O. Halchenko, Andrew C. Connolly, Peter J. Ramadge, James V. Haxby, A Model of Representational Spaces in Human Cortex, *Cerebral Cortex*, pp. 1–16, March 14, 2016, doi: 10.1093/cercor/bhw068.
7) Po-Hsuan Chen, Janice Chen, Yaara Yeshurun-Dishon, Uri Hasson, James V. Haxby, Peter J. Ramadge, A Reduced-Dimension fMRI Shared Response Model, Advances in Neural Information Processing Systems, 2015 [**One of 15 papers selected for oral presentation**].
8) Po-Hsuan Chen, J. S. Guntupalli, J. V. Haxby, and P. J. Ramadge, Joint SVD-Hyperalignment for Multi-Subject fMRI Data Alignment, IEEE International Workshop on Machine Learning for Signal Processing, October, 2014.
9) Zhen James Xiang, Yun Wang, and P. J. Ramadge, Screening Tests for Lasso Problems, Department of Electrical Engineering, Princeton University, May, 2014. [arXiv:1405.4897]
10) Xu Chen and P. J. Ramadge, Collaborative Representation, Sparsity or Nonlinearity: What Is Key to Dictionary Based Classification? IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), May 4-9, 2014.
11) Yun Wang, Xu Chen and P. J. Ramadge, Sparse Representation Classification via Sequential Lasso Screening, 1st IEEE Global Conf. on Signal and Information Processing (Global SIP), Dec. 3-5, 2013.
12) B. Conroy, B. D. Singer, J. S. Guntupalli, P. J. Ramadge, and J. V. Haxby, Inter-subject alignment of human cortical anatomy using functional connectivity, *NeuroImage*, Vol. 81, 1, pages 400–411, 2013.
13) Hao Xu, D. J. Eis and P. J. Ramadge, The Generalized Lasso Is Reducible To A Subspace Constrained Lasso, IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), May 2013.
14) Yun Wang, Zhen J. Xiang and P. J. Ramadge, Lasso Screening With A Small Regularization Parameter, IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), May 2013.

15) Yun Wang, Zhen J. Xiang and P. J. Ramadge, Tradeoffs In Improved Screening Of Lasso Problems, IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2013.
16) Hao Wu and P. J. Ramadge, The 2-Codeword Screening Test For Lasso Problems, IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2013.
17) Pingmei Xu and P. J. Ramadge, Three Structural Results On The Lasso Problem, IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2013.
18) Pingmei Xu, Hao Xu, P. J. Ramadge, Detecting Stimulus Driven Changes in Functional Brain Connectivity, IEEE Int. Conf. on Acoustics, Speech and Signal Processing (ICASSP), 2013.
19) A. Lorbert, P. J. Ramadge, The Pairwise Elastic Net Support Vector Machine for Automatic fMRI Feature Selection, IEEE Int. Conf. on Acoustics, Speech and Signal Processing (ICASSP), 2013.
20) A. Lorbert, J. S. Guntupally D. J. Eis, J. V. Haxby, P. J. Ramadge, Collaborative Denoising of Multi-Subject fMRI Data, IEEE Int. Conf. on Acoustics, Speech and Signal Processing (ICASSP), 2013.
21) Xu Chen and P. J. Ramadge, Music Genre Classification Using Multiscale Scattering and Sparse Representations, 47th Conference on Information Sciences and Systems (CISS 2013), Johns Hopkins University, March 2013.
22) Alexander Lorbert and Peter J. Ramadge, Kernel Hyperalignment, *Advances in Neural Information Processing Systems 25*, edited by P. Bartlett and F.C.N. Pereira and C.J.C. Burges and L. Bottou and K.Q. Weinberger (2012). [**Selected for Spotlight Presentation**] (25% acceptance rate, 20% of accepted papers selected for spotlight presentation)
23) A. Lorbert, D. M. Blei, R. E. Schapire, and P. J. Ramadge, A Bayesian Boosting Model, arXiv:1209.1996, Nov. 2012.
24) Hao Xu, A. Lorbert, P. J. Ramadge, J. S. Guntupalli, and J. V. Haxby, Regularized Hyperalignment of Multi-set fMRI Data, Proc. IEEE Signal Processing Workshop, Ann Arbor Michigan, 2012.
25) Zhen J. Xiang, and P. J. Ramadge, Edge Preserving Image Regularization Based on Morphological Wavelets and Dyadic Trees, *IEEE Transactions on Image Processing*, April 2012.
26) Zhen James Xiang and Peter J. Ramadge, "Fast lasso screening tests based on correlations," Proc. IEEE Int. Conference on Acoustics, Speech and Signal Processing, Kyoto, 2012.
27) Zhen James Xiang, Hao Xu, Peter J. Ramadge, "Learning Sparse Representations of High Dimensional Data on Large Scale Dictionaries," *Advances in Neural Information Processing Systems 24,* edited by J. Shawe-Taylor and R.S. Zemel and P. Bartlett and F. Pereira and K.Q. Weinberger (2011) [**Selected for Oral Presentation**] (22% acceptance rate; 7% of accepted papers selected for oral presentation.) (***Honorable Mention- Outstanding Student Paper Award***.)
28) James V. Haxby, J. Swaroop Guntupalli, Andrew C. Connolly, Yaroslav O. Halchenko, Bryan R. Conroy, M. Ida Gobbini, Michael Hanke, Peter J. Ramadge, ``A common, high-dimensional model of the representational space in human ventral temporal cortex,'' *Neuron*, October 2011.
29) Zhen James Xiang, Zhuo Zhang, Pingmei Xu, Peter J. Ramadge, "Learning a wavelet tree for multichannel image denoising," IEEE Int. Conference on Image Processing, Brussels, 2011.
30) B. Conroy and P. J. Ramadge, "The grouped two-sided orthogonal procrustes problem," IEEE Int. Conference on Acoustics, Speech & Signal Processing, Prague, May 2011.
31) H. Xu, Y. T. Xi, R. Lee and P. J. Ramadge, "Real-time conjugate gradients for on-line fMRI classification," IEEE Int. Conference on Acoustics, Speech & Signal Processing, Prague, May 2011.
32) A. Lorbert and P. J. Ramadge, "The rotational lasso," IEEE Int. Conference on Acoustics, Speech & Signal Processing, Prague, May 2011.
33) Y. T. Xi, H. Xu, R. Lee and P. J. Ramadge, "On-line kernel SVM for real-time fMRI brain state prediction," IEEE Int. Conference on Acoustics, Speech & Signal Processing, Prague, May 2011.
34) Zhen James Xiang and Peter J. Ramadge, "Morphological wavelet transform with adaptive dyadic structures," IEEE Int. Conf. on Image Processing, Hong Kong, September 2010.
35) Alexander Lorbert and Peter J. Ramadge, "Descent methods for tuning parameter refinement," Thirteenth AISTATS; 9:469-476, 2010.
36) Alexander Lorbert, David Eis, Victoria Kostina, David Blei, Peter Ramadge, "Exploiting covariate similarity in sparse regression via the pairwise elastic net," Thirteenth AISTATS; 9:477-484, 2010.
37) Eugene Brevdo and Peter J. Ramadge, "Bridge detection and robust geodesics estimation via random walks." IEEE ICASSP, Dallas, Texas, March 2010.
38) Zhen James Xiang and Peter J. Ramadge, "Morphological wavelets and the complexity of dyadic trees." IEEE ICASSP, Dallas, Texas, March 2010.

39) Bryan Conroy, Yongxin Taylor Xi, Peter Ramadge, "A supervisory approach to semi-supervised clustering." IEEE Int. Conf. on Acoustics, Speech & Signal Processing, Dallas, Texas, March 2010.
40) Alexander Lorbert and Peter J. Ramadge, "Level set estimation on the sphere." IEEE Int. Conference on Acoustics, Speech & Signal Processing, Dallas, Texas, March 2010.
41) Bryan Conroy, Ben Singer, James Haxby and Peter Ramadge, "fMRI-Based inter-subject cortical alignment using functional connectivity," *Advances in Neural Information Processing Systems 22,* edited by Y. Bengio, D. Schuurmans, J. Lafferty, C. K. I. Williams and A. Culotta (2009).
42) Zhen James Xiang, Yongxin Taylor Xi, Uri Hasson and Peter Ramadge, "Boosting with spatial regularization," *Advances in Neural Information Processing Systems 22,* edited by Y. Bengio, D. Schuurmans, J. Lafferty, C. K. I. Williams and A. Culotta (2009).
43) Yongxin Taylor Xi and Peter J. Ramadge, ``Using sparse regression to learn effective projections for face recognition,'' IEEE Int. Conf. Image Processing, Cairo Egypt, Oct., 2009.
44) M. Sabuncu, B. Singer, Bryan Conroy, P. Ramadge, J. Haxby, "Function-based inter-subject alignment of human cortical anatomy," Cerebral Cortex, 2009.
45) Zhen James Xiang and P. J. Ramadge, "Sparse boosting." IEEE Int. Conf. on Acoustics, Speech & Signal Processing, Taiwan, April 18-24, 2009.
46) Yongxin Taylor Xi and P. J. Ramadge, "Separable PCA for image classification." IEEE Int. Conf. on Acoustics, Speech & Signal Processing, Taiwan, April 18-24, 2009.
47) Shannon M. Hughes and Peter J. Ramadge, "Connecting spectral and spring methods for manifold learning." IEEE Int. Conf. on Acoustics, Speech & Signal Processing, Taiwan, April 18-24, 2009. (***Best Student Paper Award***)
48) Yongxin Taylor Xi, Zhen James Xiang, Peter Ramadge and Robert Schapire "Speed and sparsity of regularized boosting." AISTATS 2009.
49) Bryan Conroy, Ben Singer, Peter Ramadge, and James Haxby, "Inter-subject functional connectivity alignment of human cortex," Neuroscience, Washington DC, 2008. (abstract & poster)
50) B. Conroy, B. Singer, P. Ramadge, J. Haxby, "Inter-subject Functional Connectivity Alignment," 14th Annual Human Brain Mapping Conference, Melbourne, Australia, June, 2008. (abstract & poster)
51) M. R. Sabuncu and P. J. Ramadge, "Using Spanning Graphs For Efficient Image Registration," *IEEE Trans. on Image Processing*, vol. 17 (5), May, 2008: 788-797.
52) M. R. Sabuncu, B. D. Singer, R. E. Bryan, P. J. Ramadge, and J. H. Haxby, "Function-based inter-subject alignment of the cortical anatomy," 12th Annual Human Brain Mapping Conf., June 2006.
53) M. R. Sabuncu and P. J. Ramadge, "Graph-theoretic image registration using prior examples," EUSIPCO, Antalya, Turkey, September, 2005.
54) Ja-Chen Audrey Lee, Peter J. Ramadge and David I. Feinstein, ``X-ray physics in plastics: low absorption keeps photon in play," Denver X-ray Conference, Colorado Springs, CO, August, 2005.
55) M. R. Sabuncu and P. J. Ramadge, "Gradient based optimization of an EMST image registration function," IEEE ICASSP, Philadelphia, March 2005.
56) M. R. Sabuncu and P. J. Ramadge, "Fast alignment of digital images using a lower bound on an entropy metric," IEEE International Conference on Image Processing, Singapore, Oct. 2004.
57) M. R. Sabuncu and P. J. Ramadge, "Gradient based nonuniform sampling for information theoretic alignment methods," 26th Int. Conference of the IEEE Engineering in Medicine and Biology Society, San Francisco, California. September 1-5, 2004.
58) R. Radke, P. J. Ramadge, S. R. Kullarni, T. Echigo, "Efficiently Synthesizing Virtual Video," IEEE Trans. Circuits Systems for Video Technology, Vol. 13, no. 4, pp. 325 -337, April 2003.
59) M. R. Sabuncu and P. J. Ramadge, "Spatial Information in Entropy-based Image Registration," Biomedical Image Registration LNCS 2717, Springer-Verlag, 2003. (Second International Workshop, WBIR 2003, Philadelphia, PA, June 23-24, 2003.)
60) V. Zagorodnov, P. Ramadge, "Data rate smoothing in interactive walkthrough applications using 2D prefetching," IEEE Conference on Image Processing, Rochester, NY, Sept. 22-25. 2002.
61) R. J. Radke, V. Zagorodnov, S.R. Kulkarni, P. J. Ramadge, and T. Echigo, "Using View Interpolation for Low Bit-Rate Video," IEEE Int. Conf. on Image Processing, Oct 7-10, 2001.
62) R. J. Radke, V. Zagorodnov, S.R. Kulkarni, P. Ramadge, "Estimating Correspondence in Digital Video", ITCC, 2001, Las Vegas. **(*Best Student Paper Award*)**
63) Graham Goodwin, Peter J. Ramadge, and Peter E. Caines, "Discrete-Time Multivariable Adaptive Control," in Control Theory: Twenty-Five Seminal Papers (1932-1981*)*, IEEE Press, 2001.

64) Peter J. Ramadge, "Geometric Results on the Well-Posedness of Switched Feedback Linear Systems," 11th Yale Workshop on Adaptive and Learning Systems, Yale University, June 2001.
65) Vitali Zagorodnov and Peter J. Ramadge, "Error Stabilization in Successive Estimation of Registration Parameters," Proc. IEEE Int. Conf. Image Processing, Vancouver, Sept. 11-13, 2000.
66) Richard J. Radke, Peter J. Ramadge, Sanjeev R. Kulkarni, Tomio Echigo and Shun-ichi Iisaku, "Recursive Propagation of Correspondences with Applications to the Creation of Virtual Video," IEEE Proc. Int. Conf. Image Processing, Vancouver, Sept. 11-13, 2000.
67) Peter J. Ramadge, Richard J. Radke, Tomio Echigo and Shun-ichi Iisaku, "Efficiently Estimating Projective Transformations," Proc. IEEE Int. Conf. Image Processing, Vancouver, Sept. 11-13, 2000.
68) Y.-P. Tan, S. R. Kulkarni, P. J. Ramadge, "Rapid Estimation of Camera Motion from Compressed Video With Application to Video Annotation," IEEE Trans. on Circuits and Systems for Video Technology, vol 10 no. 11, pp. 133-146, Feb., 2000.
69) Y.-P. Tan, S. R. Kulkarni, and P. J. Ramadge, "A Framework for Measuring Video Similarity with Application to Video Query By Example," Proc. IEEE Int. Conf. Image Processing, October 25-28, 1999, Kobe, Japan.
70) T. Echigo, R. Radke, P. J. Ramadge, and Hisashi Miyamori, "Ghost Error Elimination and Superposition of Moving Objects in Video Mosaicing," Proceedings of the IEEE International Conference on Image Processing, October 25-28, 1999, Kobe, Japan.
71) T. Echigo, R. Radke, Peter Ramadge, Hisashi Miyamori and Shun-ichi Iisaku, "Video Mosaic from Segmented Regions," IRU'98, Gifu Prefecture, Japan ,July 29-30, 1998.
72) Y.-P. Tan, S. R. Kulkarni, and P. J. Ramadge, "The Instability of Planar Mosaicking*," Proceedings of the Tenth Yale Workshop on Adaptive and Learning Systems*, June 10-12, 1998.
73) J. Hocherman-Frommer, S. R. Kulkarni, P. J. Ramadge, "Controller Switching Based on Output Predictions," *Proceedings of the Workshop on Learning, Control, and Hybrid Systems*, Center for Artificial Intelligence and Robotics, Bangalore, India, Jan. 4-8 1998.
74) DiGennaro, C. Horn, S. R. Kulkarni and P. J. Ramadge, "Reduction of Timed Hybrid Systems," *Discrete Event Dynamic Systems: Theory and Applications*, 8, pp. 343-351, 1998.
75) J. Hocherman-Frommer, S. R. Kulkarni and P. J. Ramadge, "Controller Switching Policies Based on Output Prediction Errors," *IEEE Transactions on Automatic Control,* 43(5), pp. 596-607, May 1998.
76) D. Saur, Y.-P. Tan, S. R. Kulkarni, and P. J. Ramadge, "Automated analysis and Annotation of Structured Video," IS&T/SPIE Symposium on Electronic Imaging '97: Storage and Retrieval for Image and Video Databases V, San Jose, CA, Feb. 8-14, 1997.
77) S. R. Kulkarni and P. J. Ramadge, ``On the performance of a class of hybrid controller switching policies," Control Using Logic Based Switching, Springer Lecture Notes in Control and Information Sciences 222, Springer Verlag, London 1997.
78) C. Horn and P. J. Ramadge, "A topological analysis of a family of dynamical systems with non-standard chaotic and periodic behaviour," *Int. J. Control,* vol. 67, no. 6, pp. 979-996, 1997.
79) S. R. Kulkarni and P.J. Ramadge, "Model and Controller Switching Policies Based on Output Prediction Errors," *IEEE Transactions on Automatic Control,* Nov. 1996.
80) Y.-P. Tan, S. R. Kulkarni, and P. J. Ramadge, "Extracting good features for motion estimation," Proc. IEEE International Conference on Image Processing, Lausanne Switzerland, Sept. 16-19 1996, pp. 117-120.
81) Horn and P. J. Ramadge, "Robustness Issues for Hybrid Systems," *Proceedings of the IEEE Conference on Decision and Control*, New Orleans, Dec. 1995, pp. 1467-1472
82) Y.-P. Tan, S. R. Kulkarni and P. J. Ramadge, "A New Method for Camera Motion Parameter Estimation," *Proc. International Conference on Image Processing*, Oct., 1995, pp. 406-409.
83) Y.-P. Tan, S. R. Kulkarni and P. J. Ramadge, "Detection, Tracking, and Profile Estimation of Multiple Moving Objects," *Proc. Second Asian Conference on Computer Vision*, Dec., 1995, pp. 722-726.
84) S. Kulkarni and P. J. Ramadge, "Prediction Error Based Controller Selection Policies," *Proceedings of the IEEE Conference on Decision and Control*, New Orleans, LA, Dec. 13-15th, 1995, pp. 3211-3216.
85) S. Kulkarni and P. J. Ramadge, "On the Existence and Complexity of Convergent On-line Decision Rules", *Proceedings of the IEEE Conference on Decision and Control*, New Orleans, LA, Dec. 13-15th, 1995, pp. 3022-3027

86) J. Hochermann-Frommer, Sanjeev Kulkarni and P. J. Ramadge, "Supervised Switched Control Based on Output Prediction Errors," *Proceedings of the IEEE Conference on Decision and Control*, New Orleans, LA, Dec. 13-15th, 1995, pp. 2316-2317.
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