

PETER J. RAMADGE

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Citizenship: Naturalized American Citizen

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

AWARDS AND HONORS

- Appointed 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, Control Systems Society, IEEE (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

• Chair	Princeton University, Electrical Engineering	7/1/01 - present
• Affiliated faculty member	Program in Applied and Computational Mathematics	1/5/06 - present
• Associate Chair	Princeton University, Electrical Engineering	7/1/00 - 30/6/00
• Professor	Princeton University, Electrical Engineering	7/1/95 - 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	9/1/83 - 12/20/83
• Part -Time Lecturer	University of Newcastle	2/1/78 - 6/15/78

EXPERIENCE

Research

- Signal processing for medical and fMRI imaging, video and image analysis and annotation, digital libraries, estimation, video search.
- Hybrid control systems, supervisory control of discrete-event systems.

- On-line optimization of stochastic systems, and adaptive control.

Teaching

- *Undergraduate*: Signals and Systems, Image Processing, Elements of Modern Technology; MATLAB Short Course (past 5 years).
- *Graduate*: Linear Systems, Estimation and Detection, Nonlinear Systems (past 5 years).

Administration

- *Department*:
 - Chair: 2001- present
 - Associate Chair 00-01.
 - Chair of the Faculty Hiring Committee, 00-01.
 - Chair of the General Exam Committee 99-01,
 - Department Strategic Planning Committee 1999, 2005.
 - Undergraduate Representative 95-97.
 - Director of Graduate Studies 90-93.
- *Engineering School*:
 - Dean's Executive Committee 01- present.
 - Associate Dean Search Committee 2007.
 - Wu Fellowship Committee 98-00.
- *Princeton University*:
 - The President's Faculty Advisory Committee on Appointments and Advancements 04-05, 07-08.
 - Committee member: Program in Neuroscience, 07-08.
 - Princeton Rhodes Committee 98-00.
 - Policy Subcommittee of the Graduate School & Graduate Fellowship Subcommittee of the Graduate School.
 - University Committee on the Course of Study.

SELECTED INVITED TALKS AND SEMINARS

- Telcordia, November, 2004 (Image and Video Fusion with Selected Applications).
- Dept. Electrical Engineering and Computer Science, University of Michigan, Lucent Distinguished Lecture Series on Information Technology and Science, April 8, 2004.
- Dept. Electrical Engineering, Rice University, Feb. 28, 2003. (Registration of Image Sequences)
- Dept. Electrical Engineering, University of Waterloo, August 1, 2001. (Well-Posedness of Switched Feedback Systems)
- Dept. of Electrical Engineering, University of Toronto, May 25, 2000 (Can Video Registration be Stabilized?).

SELECTED CONFERENCE AND WORKSHOP PARTICIPATION

- 15th Annual Human Brain Mapping Conference, San Francisco, June, 2009.
- ICASSP, Taipei Taiwan, March 2009.
- NIPS, Vancouver, Canada, Dec. 2008.
- 14th Annual Human Brain Mapping Conference, Melbourne, Australia, June, 2008.
- EUSIPCO, Antalya, Turkey, September, 2005.
- IEEE ICASSP, Philadelphia, March, 2005.
- IEEE International Conference on Image Processing, Oct., 2004, Singapore.
- 26th International Conference of the IEEE Engineering in Medicine and Biology Society, San Francisco, California. September 1-5, 2004.
- 1st National Univ. of Washington ADVANCE Leadership Workshop for Dept. Chairs, July 8-9, 2004.
- SEAS Leadership Council Annual Meeting, Princeton University, April 24-25, 2004.
- Conference on Information Sciences and Systems, Princeton University, March 15-17, 2004.
- SEAS Strategic Planning Workshops: UG Education, Graduate Education, Humanities and the Arts, Information Technology, Industry and Government, and Policy and Society. Fall 2003.
- Workshop on BioMedical Image Registration, University of Pennsylvania, June 23-24, 2003.

- SEAS Leadership Council Annual Meeting, Princeton University, April 24-25, 2003.
- NSF Workshop on Nano-Engineering Education, Santa Clara CA, Jan 27-29, 2003.
- CHES NSF ITR Kickoff Meeting, Univ. California, Berkeley, Nov. 14, 2002.
- IEEE International Conference on Image Processing, Rochester, NY, Sept. 22-25, 2002.
- IEEE International Conference on Image Processing, Thessaloniki, Greece, Oct. 8-10, 2001.
- International Conference on Dynamics of Continuous, Discrete and Impulsive Systems, University of Western Ontario, July 2001.
- 11th Yale Workshop on Adaptive and Learning Systems, Yale University, June 2001.

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

- Workshop Co-Organizer, Princeton/Supelec/Alcatel-Lucent Workshop on Wireless Communications and Networking. Feb 4-5, 2008, Princeton NJ.
- 2006 George S. Axelby Outstanding Paper Award Committee, IEEE Control Systems Society.
- Steering Committee, the Sarnoff Annual Symposium, 2006, 2007, 2008.
- NSF Proposal Review Panel, NSF, Washington (many times).
- 2003 American Automatic Control Council John Ragazzini Education Award Committee.
- 2002 George S. Axelby Outstanding Paper Award Committee, IEEE Control Systems Society.
- Invited Session Chair, IEEE Int. Conf. on Image Processing, Rochester, NY, 2002.
- Invited Session Chair, IEEE Conference on Decision and Control, Dec. 2000.
- Program Committee, 3rd International Conference on Information, Communications, and Signal Processing (ICICS 2001).
- Co-Chair, Princeton Conference on Information Sciences and Systems, March 2000.
- Workshop Co-organizer and presenter, IEEE Conf. on Decision and Control, San Diego, Dec. 1997.
- Workshop Co-organizer: Block Island Workshop on Switching and Control, 1996.
- Program Committee, 1996 IEEE Conference on Decision and Control.
- 1996 American Automatic Control Council Eckman Award Committee.
- 1996 NSF Career Awards Committee.
- Program Committee, DIMACS Workshop on Verification and Control of Hybrid Systems.
- Program Committee, 1995 European Control Conference.
- Program Chair, The 32nd IEEE Conference on Decision and Control, San Antonio, Texas, Dec. 1993.
- Past Associate Editor: *Systems and Control Letters*; *Mathematics of Control, Signals and Systems*; *Discrete Event Dynamic Systems: Theory and Applications*; *IEEE Transactions Automatic Control*.
- Reviewer: National Science Foundation; Swedish Research Council for Engineering Sciences; National Science and Engineering Research Council of Canada; Australian National University and Australian Research Council.

GRADUATE STUDENTS

- Golaszewski, C., Ph.D., On the Supervisory Control of Discrete Event Systems, Oct. 1989. (Germany)
- Serrano, L., Ph.D., The Effects of Time Sampling and Quantization in the Discrete Control of Continuous Systems, August 1990. (IBM)
- Chong, K. P., Ph.D., On-Line Stochastic Optimization of Queuing Systems, June 1991. (Prof. Colorado State)
- Chase, J., Ph.D., Analysis of the Dynamics of Continuous Variable Systems with a scheduling controller, Sept. 1991. (AT&T, Austin)
- Horn, C., Ph.D., Topics in Hybrid Systems and Stochastic Approximations, Nov. 1995. (Thomson)

- Zhang, L., Ph.D., Operational Models and Traffic Control in Intelligent Vehicle Highway Systems, Oct., 1995 (IBM)
- Tan, Y.P., Ph.D., Digital Video Analysis and Manipulation, July 1997 (Associate Prof., Nanyang Technological University)
- Zhang, Q., M.S.E., Sept 2000. (Panasonic)
- Radke, R., Ph.D., NSF Fellow and Wu Fellow, 1996-2001 (Associate Prof., RPI)
- Zagronodov, V., Ph.D., 1998-2003 (Assist. Prof. Nanyang Technological University.)
- Audrey Ja-Chin Lee (joint with Valerie Thomas & David I. Feinstein), 2000-2005.
- Sabuncu, Mert Rory, 2001-2006, Assistant Professor, Harvard Medical School.
- Shannon Hughes, NSF Fellow and Wu Fellow (with Ingrid Daubechies), 2003-08 (Colorado, EE)
- Eugene Brevdo, NSF Fellow and Wu Fellow (with Ingrid Daubechies), 2005-
- Bryan Conroy, 2005-
- Yongxin Taylor Xi, 2006-
- Zhen James Xiang, 2007-
- Alex Lorbert, 2007-
- David Eis, 2008-
- Hao Xu, 2008-

POSTDOCS

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

PUBLICATIONS

- (1) Bryan Conroy, Ben Singer, James Haxby and Peter Ramadge, "fMRI-Based inter-subject cortical alignment using functional connectivity," NIPS 2009, Dec. 2009, Vancouver, Canada.
- (2) Zhen James Xiang, Yongxin Taylor Xi, Uri Hasson and Peter Ramadge, "Boosting with spatial regularization," NIPS 2009, Dec. 2009, Vancouver, Canada.
- (3) M. Sabuncu, B. Singer, Bryan Conroy, P. Ramadge, J. Haxby, "Function-based inter-subject alignment of human cortical anatomy," Cerebral Cortex, 2009.
- (4) Zhen James Xiang and P. J. Ramadge, "Sparse boosting." ICASSP, Taiwan, April 18-24, 2009.
- (5) Yongxin Taylor Xi and P. J. Ramadge, "Separable PCA for image classification." ICASSP, Taiwan, April 18-24, 2009.
- (6) Shannon M. Hughes and Peter J. Ramadge, "Connecting spectral and spring methods for manifold learning." ICASSP, Taiwan, April 18-24, 2009. (**Best Student Paper Award**)
- (7) YongXi Taylor Xi, Zhen James Xiang, Peter Ramadge and Robert Schapire "Speed and sparsity of regularized boosting." AISTATS 2009, Florida, April 14-18, 2009.
- (8) Bryan Conroy, Ben Singer, Peter Ramadge, and James Haxby, "Inter-subject functional connectivity alignment of human cortex," Neuroscience, Washington DC, 2008. (abstract & poster)
- (9) 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)
- (10) M. R. Sabuncu and P. J. Ramadge, "Using Spanning Graphs For Efficient Image Registration," *IEEE Transactions on Image Processing*, vol. 17 (5), May, 2008: 788-797.
- (11) 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 Conference, Florence, Italy, June 2006.
- (12) M. R. Sabuncu and P. J. Ramadge, "Graph-theoretic image registration using prior examples," *EUSIPCO*, Antalya, Turkey, September, 2005.
- (13) 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.
- (14) M. R. Sabuncu and P. J. Ramadge, "Gradient based optimization of an EMST image registration function," *IEEE ICASSP*, Philadelphia, March, 2005.
- (15) 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.

- (16) M. R. Sabuncu and P. J. Ramadge, "Gradient based nonuniform sampling for information theoretic alignment methods," *26th International Conference of the IEEE Engineering in Medicine and Biology Society*, San Francisco, California. September 1-5, 2004.
- (17) 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.)
- (18) R. Radke, P. J. Ramadge, S. R. Kulkarni, T. Echigo, "Efficiently Synthesizing Virtual Video," *IEEE Trans. Circuits Systems for Video Technology*, Vol. 13, no. 4, pp. 325 -337, April 2003.
- (19) 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.)
- (20) 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.
- (21) R. J. Radke, V. Zagorodnov, S.R. Kulkarni, P. J. Ramadge, and T. Echigo, "Using View Interpolation for Low Bit-Rate Video," *IEEE Intn. Conf. on Image Processing*, Oct 7-10, Thessaloniki, Greece, 2001.
- (22) R. J. Radke, V. Zagorodnov, S.R. Kulkarni, P. Ramadge, "Estimating Correspondence in Digital Video", *ITCC*, 2001, Las Vegas. (student best paper award)
- (23) 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.
- (24) 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.
- (25) Vitali Zagorodnov and Peter J. Ramadge, "Error Stabilization in Successive Estimation of Registration Parameters," *Proceedings of the IEEE International Conference on Image Processing*, Vancouver, Canada, September 11-13th, 2000.
- (26) 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 Proceedings of the International Conference on Image Processing*, Vancouver, Canada, September 11-13th, 2000.
- (27) Peter J. Ramadge, Richard J. Radke, Tomio Echigo and Shun-ichi Iisaku, "Efficiently Estimating Projective Transformations," *Proceedings of the IEEE International Conference on Image Processing*, Vancouver, Canada, September 11-13th, 2000.
- (28) Y.-P. Tan, S. R. Kulkarni, P. J. Ramadge, "Rapid Estimation of Camera Motion from Compressed Video With Application to Video Annotation," *IEEE Transactions on Circuits and Systems for Video Technology*, vol 10 no. 11, pp. 133-146, Feb., 2000.
- (29) Y.-P. Tan, S. R. Kulkarni, and P. J. Ramadge, "A Framework for Measuring Video Similarity with Application to Video Query By Example," *Proceedings of the IEEE International Conference on Image Processing*, October 25-28, 1999, Kobe, Japan.
- (30) 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.
- (31) 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.
- (32) 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.
- (33) 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.
- (34) 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.
- (35) 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.
- (36) 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.

- (37) 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.
- (38) 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.
- (39) S. R. Kulkarni and P. J. Ramadge, "Model and Controller Switching Policies Based on Output Prediction Errors," *IEEE Transactions on Automatic Control*, Nov. 1996.
- (40) 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.
- (41) 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
- (42) 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.
- (43) 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.
- (44) 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.
- (45) 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
- (46) 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.
- (47) C. Horn and P. J. Ramadge, "Duality in Routing and Scheduling Systems," *Proceedings of the IEEE Conference on Decision and Control*, Orlando, Florida, Dec. 1994.
- (48) S. Di Gennaro, C. Horn, S. Kulkarni and P. J. Ramadge, "Reduction of Timed Hybrid Systems," *Proceedings of the IEEE Conference on Decision and Control*, Orlando, Florida, Dec. 1994.
- (49) P. J. Ramadge, "Supervisory control of discrete event and hybrid systems," *Proceedings of the 1994 IEEE Symposium on Emerging Technologies and Factory Automation (SEIKEN Symposium)*, Institute of Industrial Science, Tokyo University, Tokyo, Japan, Nov. 6-10, 1994.
- (50) P. J. Ramadge, "Hybrid dynamics: continuous and discrete systems," *Proceedings of BMW-94: Methods Mathematiques pour la Synthese des Systems Informatiques*, Universite du Quebec a Montreal, May 16 -18, 1994.
- (51) E. Chong and P. J. Ramadge, "Stochastic Optimization of Regenerative Systems using Infinitesimal Perturbation Analysis," *IEEE Trans. Automatic Control*, pp. 1400-1410, July 1994.
- (52) E. Chong and P. J. Ramadge, "Optimal load sharing in soft real-time systems using likelihood ratios," *Journal of Optimization Theory and its Applications*, vol. 82 no. 1, pp. 23-48, July 1994.
- (53) C. Horn and P. J. Ramadge, "Dynamics of switched arrival systems with thresholds," *Proceedings of the IEEE Conference on Decision and Control*, Dec. 1993.
- (54) E. Chong and P. J. Ramadge, "Optimization of queues using an IPA based stochastic algorithm with general update times," *SIAM J. on Control*, vol. 31, no. 3, pp. 698--732, May, 1993.
- (55) C. Chase, J. Serrano, and P. J. Ramadge, "Periodicity and chaos from switched flow systems: contrasting examples of discretely controlled continuous systems," *IEEE Trans. Automatic Control*, January 1993.
- (56) Peter J. Ramadge and W. M. Wonham, The control of discrete event systems, In: *Discrete Event Dynamic Systems*, Edited by Y. C. Ho, IEEE Press, 1992.
- (57) E. Chong and P. J. Ramadge, "Convergence of recursive optimization algorithms using infinitesimal perturbation analysis estimates," *Discrete Event Dynamic Systems: Theory and Applications*, Vol. 1 no. 4, June 1992.
- (58) C. Chase and P. J. Ramadge, On real-time scheduling policies for flexible manufacturing systems, *The IEEE Transactions on Automatic Control*, April, 1992.
- (59) C. Chase and P. J. Ramadge, "Using Markov maps to analyze a class of hybrid systems," *Proceedings of the 26th Conference on Information Sciences and Systems*, March, 1992, Princeton University, Princeton NJ.

- (60) L. Serrano and P. J. Ramadge, Sampled disturbance decoupling with stability using multirate control, *The IEEE Transactions on Automatic Control*, 1991.
- (61) E. Chong and P.J. Ramadge, "On regenerative stochastic approximations with applications to optimization using IPA," *Proceedings of the 25th Conference on Information Sciences and Systems*, Johns Hopkins University, March 1991.
- (62) C. Golaszewski, and P. J. Ramadge, "Boolean coordination problems for product discrete event systems," *Proceedings of the 29th IEEE Conference on Decision and Control*, Hawaii, Dec. 1990.
- (63) C. Chase, and P. J. Ramadge, "Predictability of a class of one-dimensional supervised systems," *Proceedings of the Fifth IEEE International Symposium on Intelligent Control*, Philadelphia, Sept. 1990.
- (64) E. K. P. Chong and P. J. Ramadge, "Optimal load sharing in soft real-time systems: An on-line algorithm using likelihood ratio estimates," *Proceedings of the 29th IEEE Conference on Decision and Control*, Hawaii, Dec. 1990.
- (65) C. Chase, J. Serrano, and P. J. Ramadge, "Interesting examples of supervised continuous variable systems," *Proceedings of the 29th IEEE Conference on Decision and Control*, Hawaii, Dec. 1990.
- (66) E. Chong and P. J. Ramadge, "Convergence of Recursive Optimization Algorithms Using IPA Derivative Estimates," *Proceedings of the 1990 American Control Conference*, San Diego, May 1990.
- (67) C. Chase and P.J. Ramadge, "Dynamics of a switched N buffer system," *Proceedings of the 28th Allerton Conference on Communications, Control, and Computing*, University of Illinois, Urbana-Champaign, Oct. 1990.
- (68) E. Chong and P.J. Ramadge, On a stochastic optimization algorithm using IPA which updates after every customer, The 28th Allerton Conference on Communications, Control, and Computing, University of Illinois, Urbana-Champaign, Oct. 1990.
- (69) Christos G. Cassandras and Peter J. Ramadge, Toward a control theory for discrete event systems, *IEEE Control Systems Society Magazine*, vol 10 (4), June 1990.
- (70) P. J. Ramadge, On the periodicity of symbolic observations of piecewise smooth continuous variable systems, *The IEEE Transactions on Automatic Control*, vol. 35, No. 7, May 1990.
- (71) P. J. Ramadge, Symbolic observations and discrete control of continuous variable systems, The 28th IEEE Conference on Decision and Control, 1989.
- (72) C. Golaszewski and P. J. Ramadge, Asynchronous Coordination Problems for Discrete Event Systems, 27th Allerton Conference on Communications, Control, and Computing, University of Illinois, Urbana-Champaign, September 1989.
- (73) C. Chase and P. J. Ramadge, A note on the performance of real-time scheduling policies in flexible manufacturing systems, The 28th IEEE Conference on Decision and Control, December 1989.
- (74) C.H. Golaszewski, and P.J. Ramadge, The complexity of some reachability problems for a system on a finite group, *Systems and Control Letters*, } vol 12, no. 5, 1989.
- (75) P. J. Ramadge and W.M. Wonham, On the supervisory control of discrete event systems, *The IEEE Proceedings*, January 1989.
- (76) P. J. Ramadge, Some tractable supervisory control problems for discrete event systems modeled by Buchi Automata, *IEEE Transactions on Automatic Control*, vol. 34, No. 1, January 1989.
- (77) P.J. Ramadge, Modeling Discrete Event Systems, Report and Recommendations to the National Science Foundation from the NSF Workshop on Decision and Control in Discrete Event Dynamic Systems, Airlie House, Airlie, Virginia, June 19-22 1988.
- (78) P.J. Ramadge, The complexity of basic supervisory control problems for discrete event systems, in *Advanced Computing Concepts and Techniques in Control Engineering*, Ed. M.J. Denham and A.J. Laub, Springer-Verlag NATO ASI Series, Springer Verlag, New York, 1988.
- (79) C.H. Golaszewski and P.J. Ramadge, Supervisory control of discrete event systems with arbitrary controls, in *Advanced Computing Concepts and Techniques in Control Engineering*, Ed. M.J. Denham and A.J. Laub, Springer-Verlag NATO ASI Series, Springer Verlag, New York, 1988.
- (80) C. Golaszewski, and P. J. Ramadge, On the Control of Real-Time Discrete Event Systems, Conference on Information Sciences and Systems, Johns Hopkins University, March 1988.
- (81) L. Serrano and P. J. Ramadge, On the sampled disturbance decoupling problem, Conference on Information Sciences and Systems, Johns Hopkins University, March 1988.

- (82) C. Golaszewski, and P. J. Ramadge, Mutual Exclusion Problems for discrete event systems with shared events, The 27th IEEE Conference on Decision and Control, Austin, Texas, December 7--9 1988.
- (83) P.J. Ramadge, Tractable supervisory control problems for discrete event systems, In Analysis and Control of Nonlinear Systems, Edited by C.I. Byrnes, C.F. Martin, R.E. Saeks, North Holland, 1988.
- (84) W. M. Wonham and P. J. Ramadge, Modular supervisory control of discrete event systems, Mathematics of Control Signals and Systems, no. 1, January 1988.
- (85) C. Golaszewski, and P. J. Ramadge, Discrete event processes with forcing controls, The 26th IEEE Conference on Decision and Control, Los Angeles, CA, December 1987.
- (86) P. J. Ramadge, Supervisory control of discrete event systems: an overview and some new results, The 1987 IASA Workshop on Discrete Event Systems, Sopron, Hungary, August 3--7 1987
- (87) W. M. Wonham and P. J. Ramadge, On the supremal controllable sublanguage of a given language, SIAM J. on Contr. and Optimization, vol. 25, no. 3, May 1987.
- (88) P. J. Ramadge, A Note on the fixpoint characterization of supremal controllable sublanguages, Proc. 21st Conference on Information Sciences and Systems, Johns Hopkins University, March 25--27 1987.
- (89) P. J. Ramadge and W. M. Wonham, Modular feedback logic for discrete event systems, SIAM J. on Contr. and Optimization, vol. 25, 1987.
- (90) P. J. Ramadge and W. M. Wonham, Supervisory control of a class of discrete-event processes, SIAM J. on Contr. and Optimization, vol. 25 no. 1, January 1987.
- (91) P. J. Ramadge, Observability of discrete event systems, Proceedings 25th IEEE Conference on Decision and Control, Athens, Greece, December 10--12 1986.
- (92) P. J. Ramadge and W. M. Wonham, Modular supervisory control of discrete event systems, Proc. of the Seventh International Conference on Analysis and Optimization of Systems, Antibes, June 1986,
- (93) P. J. Ramadge and W. M. Wonham, Modular feedback logic for discrete event systems, Proc. 4th IFAC IFORS Symposium Large Scale Systems: Theory and Applications, Zurich, Switzerland, August 1986.
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