

Marios M. Polycarpou

Contact Information:

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Education:

1992	Ph.D.	Electrical Engineering	University of Southern California, USA
1989	M.S.	Electrical Engineering	University of Southern California, USA
1987	B.Sc. (Cum Laude)	Electrical Engineering	Rice University, USA
1987	B.A. (Cum Laude)	Computer Science	Rice University, USA

Employment:

2001-present	Professor	Dept. ECE, University of Cyprus
2008-present	Founding Interim Director	KIOS Research Center, University of Cyprus
2006-2008	Dept. Chair	Dept. ECE, University of Cyprus
2001-2006	Founding Interim Dept. Chair	Dept. ECE, University of Cyprus
2003-2005	Professor	Dept. ECE/CS, University of Cincinnati, USA
1998-2003	Associate Professor	Dept. ECE/CS, University of Cincinnati, USA
1992-1998	Assistant Professor	Dept. ECE/CS, University of Cincinnati, USA
1998-2000	Technical Consultant	SDL Inc., Cincinnati, OH, USA
2001-2003	Technical Consultant	Barron & Assoc. Inc., US Air Force Research Lab., US Office of Naval Research.

Teaching and Research Interests:

The focal areas of teaching and research are intelligent systems and control, adaptive systems, computational intelligence and neural networks, fault diagnosis, cooperative control and distributed agents, monitoring and control of critical infrastructure systems.

Academic and Professional Recognition:

- Editor-in-Chief of the *IEEE Transactions on Neural Networks* (01/2004 – present).
- IEEE Fellow -- *for contributions to the theory and application of intelligent systems and control*, (2006).
- Received more than 3500 citations according to Google Scholar.
- Participated in more than 40 research projects/grants totalling more than \$15 Million. His research has been funded by several agencies and industry in the United States, by the European Commission and by the Research Promotion Foundation of Cyprus.

- Elected AdCom Member of the IEEE Computational Intelligence Society (01/2008–12/2010)
- Elected Member of the Board of Governors of the IEEE Control Systems Society (01/2008–12/2010)
- Appointed Member of the Board of Governors of the IEEE Control Systems Society (01/2007–12/2007)
- Vice President-Conferences of the IEEE Computational Intelligence Society (01/2002—12/2003).
- Chair of the Technical Committee on Intelligent Control, IEEE Control Systems Society (2003-05)
- Associate Editor of the *IEEE Transactions on Neural Networks* (1/98-12/03).
- Associate Editor of the *IEEE Transactions on Automatic Control* (1/99-1/02).
- Associate Editor of the *International Journal of Applied Mathematics and Computer Science* (1/02-12/06).
- Associate Editor of the *International Journal of Intelligent Systems Technologies and Applications* (6/05-present).
- Advisory Board member of the *International Journal of BioSciences and Technology* (01/2008-present)
- Associate Editor for the Conference Editorial Board of the IEEE Control Systems Society (1995-1998).
- General Chair of the 19th International Conference on Artificial Neural Networks (ICANN 2009), Limassol, Cyprus, September 2009.
- General Chair of the Joint 20th IEEE International Symposium on Intelligent Control and IEEE Mediterranean Conference on Control and Automation, Limassol, Cyprus, June 2005.
- General Co-Chair for the 2007 International Symposium on Neural Networks (ISNN 2007), 3-7 June 2007, Nanjing, China.
- General Co-Chair for the 2008 International Workshop on Deregulated Electricity Market Issues in South-Eastern Europe (DEMSEE 2008), 22-23 September 2008, Nicosia, Cyprus.
- Program Chair of the 50th IEEE Conference on Decision and Control and European Control Conference (CDC-ECC 2011), December 2011.
- Program Chair of the 15th IEEE International Symposium on Intelligent Control, Patras, Greece, July 2000.
- Vice Program Chair (Invited Sessions) of the 47th IEEE Conference on Decision and Control (CDC 2008) Cancun, Mexico, December 2008.
- Awarded 2 United States Patents and 1 European Patent.
- Keynote Plenary Speaker for the joint 2001 IEEE International Conference on Control Applications and IEEE International Symposium on Intelligent Control (CCA/ISIC'01), Mexico City, Mexico, September 2001.
- Keynote Plenary Speaker for the International Scientific and Technical Conference on Technology, Automation and Control of Wastewater and Drinking Water Systems (TiASWiK'02), Gdansk, Poland, June 2002.
- Keynote Plenary Speaker at the 12th International Workshop on Systems, Signals and Image Processing, Chalkida, Greece, September 2005.
- Keynote Plenary Speaker at the 2006 International Symposium on Neural Networks (ISNN 2006), 28 May – 1 June 2006, Chengdu, China.
- Keynote Plenary Speaker at the World Congress on Computational Intelligence (WCCI-IJCNN 2006), 16-21 July 2006, Vancouver, Canada.
- Keynote Plenary Speaker at the ICSC 2006 Symposium on Brain Inspired Cognitive Systems (BICS 2006), 10-12 October 2006, Molyvos, Lesvos, Greece.
- Keynote Plenary Speaker at the 11th IFAC/IFORS/IMACS/IFIP Symposium on Large Scale Systems (LSS 2007), 23-25 July 2007, Gdansk, Poland.
- Keynote Plenary Speaker at the International Workshop on Computational Intelligence in Security for Information Systems (CISIS'08), 23-24 October 2008, Genova, Italy.
- Keynote Plenary Speaker at the 2009 International Workshop on Intelligent Systems and Applications (ISA 2009), 23-24 May 2009, Wuhan, China.
- Keynote Plenary Speaker at the 4th IEEE Conference on Industrial Electronics and Applications (ICIEA 2009), 25-27 May 2009, Xi'an, China.

- Keynote Semi-Plenary Speaker at the 7th IFAC Symposium on Fault Detection, Supervision and Safety of Technical Processes (SAFEPROCESS'09), 30 June – 3 July 2009, Barcelona, Spain.
- Keynote Plenary Speaker at the 3rd International Conference on Signals, Circuits and Systems (SCS 2009), 6-8 November 2009, Djerba, Tunisia.
- Member of the IEEE Steering Committee on Intelligent Control (1996-present).
- Member of the IFAC Steering Committee on Fault Detection, Supervision and Safety of Technical Processes (1997-present).
- Member of the Technical Committee on Neural Networks of the IEEE Computational Intelligence Society (01/2004-present).
- Member of the Executive Board of Mediterranean Control Association (06/2005-present).
- Member of the Awards Committee of the IEEE Computational Intelligence Society (01/2004-present).
- Graduate student Efrain Morales won the "Student Best Paper Award" 1999 IEEE International Conference on Control Applications for the paper entitled "Adaptive Control of Peristaltic Pumps during Continuous Venovenous Hemofiltration," which was co-authored by Morales, Polycarpou, Hemsilpin and Bissler (August 1999).
- Recipient of the William H. Middendorf Research Excellence Award, University of Cincinnati, 1997.
- Nominated by students for the *Professor of the Year* award for the academic year 1995-96, College of Engineering Tribunal.
- Nominated by students for the *Professor of the Quarter* award for the academic quarter Winter 1997, College of Engineering Tribunal.
- Graduate Student Xiaodong Zhang was the recipient of the "Best Ph.D. Dissertation Award", ECE/CS Department, University of Cincinnati, 2002.
- Graduate Student Scott Weaver was the recipient of the "Best Ph.D. Dissertation Award", ECE/CS Department, University of Cincinnati, 1999.
- Graduate Student Michael Zierolf was the recipient of the "Best M.S. Thesis Award", ECE/CS Department, University of Cincinnati, 1997.
- Graduate Student Efrain Morales was the recipient of honorable mention for the "Best M.S. Thesis Award", ECE/CS Department, University of Cincinnati, 1999.
- Graduate Student Arun Vemuri was the recipient of honorable mention for the "Best Ph.D. Dissertation Award", ECE/CS Department, University of Cincinnati, 1997.
- Publicity Chair of the 11th IEEE International Symposium on Intelligent Control, Detroit, September 1996.
- Publications Chair of the 13th IEEE International Symposium on Intelligent Control, Washington DC, September 1998.
- Finance Chair of the 14th IEEE International Symposium on Intelligent Control, Cambridge, MA, September 1999.
- Recipient of Best Paper Presentation Award at the 1992 AIAA Guidance, Navigation and Control Conference for the paper entitled "Identification and Control of Aircraft Dynamics Using Radial Basis Function Neural Networks".
- Recipient of Best Paper Presentation Award at the 1991 American Control Conference for the paper entitled "Learning Techniques for Structured Networks."
- Recipient of Honorable Mention in Phi Kappa Phi National Honor Society's Student Recognition Award (1992).
- Recipient of Outstanding Academic Achievement Award, University of Southern California (1992).
- Recipient of the Phi Beta Kappa Award, Rice University (1987).

Graduate Student Advising

PhD Students Graduated:

1. Arun Vemuri (1996), currently employed at Southwest Research Institute.

2. Scott Weaver (1998), currently employed at Wright Patterson Air Force Base.
3. Alexander Trunov (1999), currently employed at Intelligent Optical Systems, Inc.
4. Xiaodong Zhang (2001), currently Assistant Professor at Wright State University, Ohio
5. Zhong Wang (2002), currently employed at General Motors.
6. Mark Mears (2003), currently employed at Air Force Research Labs.
7. Matthew Flint (2004), currently employed at BAE Systems (Alphatech).
8. Yanli Yang (2005), currently employed at Caterpillar, Inc.

Current PhD Students:

1. Nat Hemasilpin
2. Yan Liao
3. Demetrios Eliades
4. Panayiotis Panagi

MS Students Graduated:

1. Sotiris Diakourtis (1995), currently employed at AvacomNet, Inc.
2. John Conway (1996), currently employed at Accord Controls, Inc.
3. Michael Zierolf (1996), currently employed at BFGoodrich Aerospace.
4. Efrain Morales (1999), currently employed at Eastman Kodak.
5. Umang Desai (2000), currently employed at Ethicon, Inc. (Johnson and Johnson).
6. Carlos Abascal (2001), currently employed at Harris Corporation.
7. Matt Flint (2002), currently employed at BAE Systems (Alphatech).
8. Feng Shang (2002), currently employed as a research Fellow of the Environmental Protection Agency, Cincinnati, Ohio.

Publications

[Names of graduate student co-authors working with M. Polycarpou indicated in *italic* type.]

A. Books

1. J. Farrell and M. Polycarpou, *Adaptive Approximation Based Control: Unifying Neural, Fuzzy and Traditional Adaptive Approximation Approaches*, Hoboken, NJ: J. Wiley, 2006.

(The following book reviews were published for the above book, all rating it as excellent:

- F.L. Lewis, *IEEE Trans. on Automatic Control*, vol. 52, no. 6, pp. 1167-1168, June 2007.
- E.N. Sanchez and A.Y. Alanis, *IEEE Trans. on Neural Networks*, vol. 19, no. 4, pp. 732-733, April 2008.
- D. Liu and S. Hu, *International Journal of Robust and Nonlinear Control*, vol. 18, pp. 111-112, 2008.
- G.J. Klir, *International Journal of General Systems*, vol. 35, no. 6, pp. 732-733, 2006.)

B. Refereed Archival Journal Publications

1. M. Polycarpou and P. Ioannou, "Learning and Convergence Analysis of Neural-Type Structured Networks," *IEEE Transactions on Neural Networks*, vol. 3, no. 1, pp. 39-50, January 1992.
2. M. Polycarpou and P. Ioannou, "On the Existence and Uniqueness of Solutions in Adaptive Control Systems," *IEEE Transactions on Automatic Control*, vol. 38, no. 3, pp. 474-479, March 1993.
3. E. Kosmatopoulos, M. Polycarpou, M. Christodoulou, and P. Ioannou, "High-Order Neural Network Structures for Identification of Dynamical Systems," *IEEE Transactions on Neural Networks*, vol. 6, no. 2, pp. 422-431, March 1995.

4. M. Polycarpou and A. Vemuri, "Learning Methodology for Failure Detection and Accommodation," *IEEE Control Systems*, vol. 15, no. 3, pp. 16-24, June 1995.
5. M. Polycarpou and A. Helmicki, "Automated Fault Detection and Accommodation: A Learning System Approach," *IEEE Transactions on Systems, Man, and Cybernetics*, vol. 25, no. 11, pp. 1447-1458, November 1995.
6. M. Polycarpou, "Stable Adaptive Neural Control Scheme for Nonlinear Systems," *IEEE Transactions on Automatic Control*, vol. 41, no. 3, pp. 447-451, March 1996.
7. M. Polycarpou and P. Ioannou, "A Robust Adaptive Nonlinear Control Design," *Automatica*, vol. 32, no. 3, pp. 423-427, March 1996.
8. J. Conway and M. Polycarpou, "Using Adaptive Networks to Model and Control Drug Delivery," *IEEE Expert*, vol. 11, no. 2, pp. 31-37, April 1996.
9. A. Warner, A. Bencosme, M. Polycarpou, D. Healy, C. Verme, J. Conway, and A. Vemuri, "Multiparameter Models for the Prediction of Sepsis Outcome," *Annals of Clinical and Laboratory Science*, vol. 26, no. 6, pp. 471-479, 1996.
10. A. Vemuri and M. Polycarpou, "Robust Nonlinear Fault Diagnosis in Input-Output Systems," *International Journal of Control*, vol. 68, no. 2, pp. 343-360, 1997.
11. A. Vemuri and M. Polycarpou, "Neural Network Based Robust Fault Diagnosis in Robotic Systems," *IEEE Transactions on Neural Networks*, vol. 8, no. 6, pp. 1410-1420, November 1997.
12. D. Boccelli, M. Tryby, J. Uber, L. Rossman, M. Zierolf, and M. Polycarpou, "Optimal Scheduling of Booster Disinfection in Water Distribution Systems," *ASCE Journal of Water Resources Planning and Management*, vol. 124, no. 2, pp. 99-111, March/April 1998.
13. A. Vemuri, M. Polycarpou and S. Diakourtis, "Neural Network Based Fault Detection and Accommodation in Robotic Manipulators," *IEEE Transactions on Robotics and Automation*, vol. 14, no. 2, pp. 342-348, April 1998.
14. S. Weaver, L. Baird, and M. Polycarpou, "An Analytical Framework for Local Feedforward Networks," *IEEE Transactions on Neural Networks*, vol. 9, no. 3, pp. 473-482, May 1998.
15. M. Polycarpou and M. Mears, "Stable Adaptive Tracking of Uncertain Systems Using Nonlinearly Parametrized On-Line Approximators," *International Journal of Control*, vol. 70, no. 3, pp. 363-384, May 1998.
16. A. Vemuri, M. Polycarpou and P. Pant, "Short-Term Forecasting of Traffic Delays in Highway Construction Zones Using On-Line Approximators," *Journal of Mathematical and Computer Modelling*, vol. 27, no. 9-11, pp. 311-322, May 1998.
17. M. Polycarpou and J. Conway, "Indirect Adaptive Nonlinear Control of Drug Delivery Systems," *IEEE Transactions on Automatic Control*, vol. 43, no. 6, pp. 849-856, June 1998.
18. M. Zierolf, M. Polycarpou, and J. Uber, "Development and Auto-Calibration of an Input-Output Model of Chlorine Transport in Drinking Water Distribution Systems," *IEEE Transactions on Control Systems Technology*, vol. 6, no. 4, pp. 543-553, July 1998.
19. M. Demetriou and M. Polycarpou, "Incipient Fault Diagnosis of Dynamical Systems Using On-Line Approximators," *IEEE Transactions on Automatic Control*, vol. 43, no. 11, pp. 1612-1617, November 1998.
20. M. Demetriou and M. Polycarpou, "Detection and Accommodation of Second Order Distributed Parameter Systems with Abrupt Changes in Input Term," *Kybernetika*, vol. 34, no. 6, pp. 667-679, December 1998.
21. A. Trunov and M. Polycarpou, "Automated Fault Diagnosis in Nonlinear Multivariable Systems Using a Learning Methodology," *IEEE Transactions on Neural Networks*, vol. 11, no. 1, pp. 91-101, January 2000.
22. M. Polycarpou and A. Trunov, "Learning Approach to Nonlinear Fault Diagnosis: Detectability Analysis," *IEEE Transactions on Automatic Control*, vol. 45, no. 4, pp. 806-812, April 2000.
23. A. Vemuri, M. Polycarpou and A. Ciric, "Fault Diagnosis in Differential-Algebraic Systems," *IEEE Transactions on Systems, Man, and Cybernetics Part A: Systems and Humans*, vol. 31, no. 2, pp. 143-152, March 2001.
24. E. Morales, M. Polycarpou, N. Hemasilpin and J. Bissler, "Hierarchical Adaptive and Supervisory Control of Continuous Venovenous Hemofiltration," *IEEE Transactions on Control Systems Technology*, vol. 9, no. 3, pp. 445-457, May 2001.

25. M. Polycarpou, "Fault Accommodation for a Class of Multivariable Nonlinear Dynamical Systems Using a Learning Approach," *IEEE Transactions on Automatic Control*, vol. 46, no. 5, pp. 736-742, May 2001.
26. X. Zhang, M. Polycarpou and T. Parisini, "Robust Fault Isolation of Nonlinear Input-Output Systems," *International Journal of Control*, vol. 74, no. 13, pp. 1295-1310, August 2001.
27. S. Weaver, L. Baird, and M. Polycarpou, "Using Localized Learning to Improve Supervised Learning Algorithms," *IEEE Transactions on Neural Networks*, vol. 12, no. 5, pp. 1037-1046, September 2001.
28. X. Zhang, M. Polycarpou and T. Parisini, "A Robust Detection and Isolation Scheme for Abrupt and Incipient Faults in Nonlinear Systems," *IEEE Transactions on Automatic Control*, vol. 47, no. 4, pp. 576-593, April 2002.
29. F. Shang, J. Uber and M. Polycarpou, "Particle Backtracking Algorithm (PBA) for Input-Output Modeling and Analysis of Water Quality In Distribution Systems," *ASCE Journal of Environmental Engineering*, vol. 128, no. 5, pp. 441-450, May 2002.
30. M. Polycarpou, J. Uber, Z. Wang, F. Shang and M. Brdys, "Feedback Control of Water Quality," *IEEE Control Systems*, vol. 22, no. 3, pp. 68-87, June 2002.
31. Y. Liu, K. Passino and M. Polycarpou, "Stability Analysis of M-Dimensional Asynchronous Swarms with Fixed Communication Topology," *IEEE Transactions on Automatic Control*, vol. 48, no. 1, pp. 76-95, January 2003.
32. M. Mears and M. Polycarpou, "Stable Neural Control of Uncertain Multivariable Systems," *International Journal of Adaptive Control and Signal Processing*, vol. 17, pp. 447-466, September 2003.
33. C. Chrysostomou, A. Pitsillides, L. Rossides, M. Polycarpou and A. Sekercioglu, "Congestion Control in Differentiated Services Networks using Fuzzy-RED," *IFAC Journal of Control Engineering Practice*, vol. 11, no. 10, pp. 1153-1170, October 2003.
34. Y. Liu, K. Passino and M. Polycarpou, "Stability Analysis of One-Dimensional Asynchronous Swarms," *IEEE Transactions on Automatic Control*, vol. 48, no. 10, pp. 1848-1854, October 2003.
35. J. Farrell, M. Sharma and M. Polycarpou, "Longitudinal Flight-Path Control Using On-Line Function Approximation," *AIAA Journal of Guidance, Control and Dynamics*, vol. 26, no. 6, pp. 885-897, Nov-Dec 2003.
36. M. Flint, E. Fernandez-Gaucheand and M. Polycarpou, "Stochastic Models for Cooperative Control of Multiple Autonomous UAV's Searching for Targets in an Uncertain Environment," *Military Operations Research Journal*, vol. 8, no. 4, pp. 13-32, 2003.
37. A. Vemuri and M. Polycarpou, "A Methodology for Fault Diagnosis in Robotic Systems Using Neural Networks," *Robotica*, vol. 22, pp. 419-438, Jul-Aug 2004.
38. X. Zhang, T. Parisini and M. Polycarpou, "Adaptive Fault-Tolerant Control of Nonlinear Uncertain Systems: An Information-Based Diagnostic Approach," *IEEE Transactions on Automatic Control*, vol. 49, no. 8, pp. 1259-1274, August 2004.
39. X. Zhang, R. Xu, C. Kwan, L. Haynes, Y. Yang and M. Polycarpou, "Fault tolerant formation flight control of UAVs," *International Journal of Vehicle Autonomous Systems*, vol. 2, no. 3/4, pp. 217-235, 2004.
40. X. Zhang, T. Parisini and M. Polycarpou, "Sensor Bias Fault Isolation in a Class of Nonlinear Systems," *IEEE Transactions on Automatic Control*, vol. 50, no. 3, pp. 370-376, March 2005.
41. J. Farrell, M. Sharma and M. Polycarpou, "On-line Approximation Based Control for Fixed-Wing Aircraft," *AIAA Journal of Guidance, Control and Dynamics*, vol. 28, no. 6, pp. 1089-1102, Nov-Dec 2005.
42. Z. Wang, M. Polycarpou, J. Uber and F. Shang, "Adaptive Control of Water Quality in Water Distribution Networks," *IEEE Transactions on Control Systems Technology*, vol. 14, no. 1, pp. 149-156, January 2006.
43. Y. Jin, Y. Liao, A. Minai and M. Polycarpou, "Balancing Search and Target Response in Cooperative Unmanned Aerial Vehicle (UAV) Teams," *IEEE Transactions on Systems, Man and Cybernetics: B*, vol. 36, no. 3, pp. 571-587, June 2006.
44. E. Franco, T. Parisini and M. Polycarpou, "Design and Stability Analysis of Cooperative Receding-Horizon Control of Linear Discrete-Time Agents," *International Journal of Robust and Nonlinear Control*, vol. 17, pp. 982-1001, July 2007.

45. Y. Yang, M. Polycarpou and A. Minai, "Multi-UAV Cooperative Search Using an Opportunistic Learning Method," *ASME Journal of Dynamic Systems, Measurement and Control*, vol. 129, no. 5, pp. 715-728, September 2007.
46. E. Franco, L. Magni, T. Parisini, M. Polycarpou and D. M. Raimondo, "Cooperative Constrained Control of Distributed Agents with Nonlinear Dynamics and Delayed Information Exchange: a Stabilizing Receding-Horizon Approach," *IEEE Transactions on Automatic Control*, vol. 53, no. 1, pp. 324-338, February 2008.
47. X. Zhang, M. Polycarpou and T. Parisini, "Design and Analysis of a Fault Isolation Scheme for a Class of Uncertain Nonlinear Systems," *IFAC Annual Reviews in Control*, vol. 32, no. 1, pp. 107-121, April 2008.
48. A. Ostfeld, J.G. Uber, E. Salomons, J.W. Berry, W. E. Hart, C.A. Phillips, J. Watson, G. Dorini, P. Jonkergouw, Z. Kapelan, F. di Pierro, S. Khu, D. Savic, D. Eliades, M. Polycarpou, S. Ghimire, B. Barkdoll, R. Gueli, J. Huang, E. McBean, W. James, A. Krause, J. Leskovec, S. Isovitsch, J. Xu, C. Guestrin, J. VanBriesen, M. Small, P. Fischbeck, A. Preis, M. Propato, O. Piller, G. Trachtman, Z. Yi Wu, and T. Walski, "The Battle of the Water Sensor Networks (BWSN): A Design Challenge for Engineers and Algorithms," *Journal of Water Resource Planning and Management*, vol. 134, no. 6, pp. 556-568, Nov-Dec 2008.
49. R. Selmic, M. Polycarpou and T. Parisini, "Actuator Fault Detection in Nonlinear Uncertain Systems Using Neural On-Line Approximation Models," *European Journal of Control*, vol. 15, no. 1, pp. 29-44, Jan-Feb 2009.
50. R. Ferrari, T. Parisini and M. Polycarpou, "Distributed Fault Diagnosis with Overlapping Decompositions: an Adaptive Approximation Approach," *IEEE Transactions on Automatic Control*, vol. 54, no. 4, pp. 794-799, April 2009.
51. J. Farrell, M. Polycarpou, M. Sharma and W. Dong, "Command Filtered Backstepping," *IEEE Transactions on Automatic Control*, vol. 54, no. 6, pp. 1391-1395, June 2009.
52. D. Eliades and M. Polycarpou, "A Fault Diagnosis and Security Framework for Water Systems," accepted for publication, to appear in *IEEE Transactions on Control Systems Technology*, 2009.
53. D. Eliades M. Polycarpou and B. Charalambous, "Security Issues in Drinking Water Distributions Networks," accepted for publication, to appear in *Journal of Information Assurance and Security*, 2009.
54. X. Zhang, M. Polycarpou and T. Parisini, "Fault Diagnosis of a Class of Nonlinear Uncertain Systems with Lipschitz Nonlinearities Using Adaptive Estimation," accepted for publication, to appear in *Automatica*, 2009.
55. X. Zhang, M. Polycarpou and T. Parisini, "Adaptive Fault Diagnosis and Fault-Tolerant Control of MIMO Nonlinear Uncertain Systems," tentatively accepted for publication in *International Journal of Control*, 2009.

C. Book Chapters

1. M. Polycarpou and P. Ioannou, "Stable Nonlinear System Identification Using Neural Network Models," *Neural Networks in Robotics*, pp. 147-164, Eds. G. Bekey and K. Goldberg, Kluwer Academic Publishers, 1993.
2. T. Johansen and M. Polycarpou, "Stable Adaptive Control of a General Class of Nonlinear Systems," *Neural Adaptive Control Technology*, pp. 177-204, Eds. R. Zbikowski and K. Hunt, World Scientific, 1996.
3. M. Polycarpou, "On-Line Approximators for Nonlinear System Identification: A Unified Approach," *Control and Dynamic Systems: Neural Network Systems Techniques and Applications*, vol. 7, pp. 191-230, Ed. C. Leondes, Academic Press, 1998.
4. J. Farrell and M. Polycarpou, "Neural, Fuzzy, and Approximation-Based Control," *Perspectives in Control Engineering: Technologies, Applications, and New Directions*, pp. 134-164, Ed. T. Samad, IEEE Press, 2001.

5. M. Demetriou and M. Polycarpou, "On-line Fault Detection, Diagnosis, Isolation and Accommodation of Dynamical Systems with Actuator Failures." *Adaptive Control of Nonsmooth Dynamic Systems*, pp. 85-110, Eds. G. Tao and F. Lewis, Springer-Verlag, 2001.
6. K. Passino, M. Polycarpou, D. Jacques, M. Pachter, Y. Liu, Y. Yang, M. Flint and M. Baum, "Cooperative Control for Autonomous Air Vehicles," Chapter 12 in *Cooperative Control and Optimization*, pp. 233-271, Eds. R. Murphey and P. Pardalos, Kluwer Academic Publishers, 2002.
7. M. Polycarpou, Y. Yang, Y. Liu and K. Passino, "Cooperative Control Design for Uninhabited Air Vehicles," Chapter 13 in *Cooperative Control: Models, Applications and Algorithms*, pp. 283-321, Eds. S. Butenko, R. Murphey and P. Pardalos, Kluwer Academic Publishers, 2003.
8. J. Farrell, M. Sharma and M. Polycarpou, "Online Approximation-Based Aircraft State Estimation," Chapter 11 in *Stability and Control of Dynamical Systems with Applications*, pp. 215-232, Eds. D. Liu and P. Antsaklis, Birkhauser, 2003.
9. Y. Jin, M. Polycarpou and A. Minai, "Cooperative Real-Time Task Allocation Among Groups of UAV's," Chapter 12 in *Recent Developments in Cooperative Control and Optimization*, pp. 207-224, Eds. S. Butenko, R. Murphey and P. Pardalos, Kluwer Academic Publishers, 2004.
10. T. Maddula, A. Minai and M. Polycarpou, "Multi-Target Assignment and Path Planning for Groups of UAVs," Chapter 15 in *Recent Developments in Cooperative Control and Optimization*, pp. 261-272, Eds. S. Butenko, R. Murphey and P. Pardalos, Kluwer Academic Publishers, 2004.
11. E. Kyriakides and M. Polycarpou, "Short Term Electric Load Forecasting: A Tutorial," Chapter 16 in *Trends in Neural Computation*, pp. 391-418, Eds. Ke Chen and Lipo Wang, Springer-Verlag, 2007.

D. Refereed Conference Proceedings

1. M. Polycarpou and P. Ioannou, "A Neural-Type Parallel Algorithm for Fast Matrix Inversion," *Proceedings of the Fifth International Parallel Processing Symposium*, IEEE Computer Society Press, pp. 108-113, April 1991.
2. M. Polycarpou and P. Ioannou, "Learning Techniques for Structured Networks," *Proceedings of the 1991 American Control Conference*, pp. 2413-2418, June 1991.
3. M. Polycarpou and P. Ioannou, "Convergence Analysis for a Class of Neural Networks," *Proceedings of the International Joint Conference on Neural Networks*, July 1991.
4. M. Polycarpou and P. Ioannou, "Modeling, Identification and Stable Adaptive Control of Continuous-Time Nonlinear Dynamical Systems Using Neural Networks," *Proceedings of the 1992 American Control Conference*, pp. 36-40, June 1992.
5. F. Ahmed-Zaid, P. Ioannou, M. Polycarpou and H. Youssef, "Identification and Control of Aircraft Dynamics Using Radial Basis Function Neural Networks," *Proceedings of the AIAA Guidance, Navigation and Control Conference*, August 1992.
6. (Invited) M. Polycarpou and P. Ioannou, "Neural Networks as On-Line Approximators of Nonlinear Systems," *Proceedings of the 31st IEEE Conference on Decision and Control*, pp. 7-12, December 1992.
7. M. Polycarpou and P. Ioannou, "A Robust Adaptive Nonlinear Control Design," *Proceedings of the 1993 American Control Conference*, pp. 1365-1369, June 1993.
8. M. Polycarpou, "Robust Adaptive Control for a Class of Nonlinear Systems," *Proceedings of the II International Conference on Computer Applications to Engineering Systems*, pp. 135-140, July 1993.
9. M. Polycarpou, "On-Line Approximation Approach to Fault Monitoring, Diagnosis and Accommodation," *SAE 1994 Aerospace Atlantic Conference and Exposition*, SAE Tech. Paper Series No. 941217, April 1994.
10. (Invited) M. Polycarpou, "Stable Discrete-Time Systems Identification Using Neural Networks," *Proceedings of 2nd IEEE Mediterranean Symposium on New Directions in Control and Automation*, pp. 17-24, June 1994.

11. M. Polycarpou, "An On-Line Approximation Approach to Fault Diagnosis and Accommodation," *Proceedings of the 1994 American Control Conference*, pp. 1722-1726, June 1994.
12. M. Polycarpou, "Stable Learning Scheme for Failure Detection and Accommodation," *Proceedings of the 1994 IEEE International Symposium on Intelligent Control*, pp. 315-320, August 1994.
13. P. Pant and M. Polycarpou, "Intelligent Traffic Control System for Highway Work Zones," *Proceedings of National Aerospace and Electronics Conference -- NAECOM 1995*, pp. 348-351, May 1995.
14. M. Polycarpou and J. Conway, "Modeling and Control of Drug Delivery Systems Using Adaptive Neural Control Methods," *Proceedings of 1995 American Control Conference*, pp. 781-785, June 1995.
15. S. Weaver, L. Baird, and M. Polycarpou, "On the Localization of Feedforward Networks," *Proceedings of 1995 American Control Conference*, pp. 2782-2783, June 1995.
16. (Invited) M. Polycarpou and S. Weaver, "Stable Adaptive Neural Control of Nonlinear Systems," *Proceedings 1995 American Control Conference*, pp. 847-851, June 1995.
17. A. Vemuri, S. Diakourtis, and M. Polycarpou, "Neural Network Based Fault Diagnosis and Accommodation of Robotic Manipulators," *Proceedings of 3rd IEEE Mediterranean Symposium on New Directions in Control and Automation*, Vol. I, pp. 46-52, July 1995.
18. M. Polycarpou, "An Overview of On-Line Approximation Control Methods," *Proceedings of OAI Neural Networks Symposium and Workshop*, pp. 87-89, August 1995.
19. A. Vemuri and M. Polycarpou, "Fault Diagnosis and Accommodation of Dynamic Systems using Neural Networks," *Proceedings of OAI Neural Networks Symposium and Workshop*, pp. 101-105, August 1995.
20. A. Vemuri, S. Diakourtis, and M. Polycarpou, "Fault Detection and Accommodation of Robotic Systems using Neural Networks," *Proceedings of Conference on Artificial Neural Networks in Engineering -- ANNIE'95*, pp. 897-902, November 1995.
21. (Invited) M. Polycarpou and P. Ioannou, "Adaptive Bounding Techniques for Stable Neural Control Systems," *Proceedings of 34th IEEE Conference on Decision and Control*, pp. 2442-2447, December 1995.
22. M. Polycarpou, A. Vemuri and P. Pant, "Short-Term Forecasting of Traffic Delays in Highway Construction Zones Using Neural Networks," *Proceedings of Conference on Neural Network Applications in Highway and Vehicle Engineering*, pp. 33-42, April 1996.
23. M. Demetriou and M. Polycarpou, "Fault Detection and Diagnosis of Flexible Beam," *Proceedings of 4th IEEE Mediterranean Symposium on New Directions in Control and Automation*, pp. 621-626, June 1996.
24. (Invited) A. Vemuri and M. Polycarpou, "On-Line Approximation Methods for Robust Fault Detection," *Proceedings of 13th World Congress of International Federation of Automatic Control -- IFAC'96*, Vol. K, pp. 319-324, July 1996.
25. S. Weaver, L. Baird and M. Polycarpou, "Local Feedforward Networks," *Proceedings of the Adaptive Distributed Parallel Computing Symposium*, pp. 280-290, August 1996.
26. M. Demetriou and M. Polycarpou, "Fault Diagnosis of Hyperbolic Distributed Parameter Systems," *Proceedings of the 1996 IEEE International Symposium on Intelligent Control*, pp. 194-199, September 1996.
27. M. Zierolf, M. Polycarpou and J. Uber, "A Control-Oriented Approach to Water Quality Modeling of Drinking Water Distribution Systems," *Proceedings of the 1996 IEEE International Conference on Control Applications*, pp. 96-601, September 1996.
28. S. Weaver, L. Baird and M. Polycarpou, "An Analytical Framework for Local Feedforward Networks," *Proceedings of the 1996 IEEE International Symposium on Intelligent Control*, pp. 450-455, September 1996.
29. (Invited) M. Polycarpou and M. Mears, "On-Line Approximation-Based Tracking of Uncertain Systems," *Proceedings of the 1997 American Control Conference*, pp. 1799-1803, June 1997.
30. (Invited) A. Vemuri and M. Polycarpou, "Robust Nonlinear Fault Diagnosis in Input-Output Systems," *Proceedings of the 1997 American Control Conference*, pp. 927-931, June 1997.
31. M. Demetriou and M. Polycarpou, "Fault Accommodation of Output-Induced Actuator Failures for a Flexible Beam with Collocated Input and Output," *Proceedings of the 5th IEEE Mediterranean Conference on Control and Systems*, July 1997.

32. M. Polycarpou and M. Demetriou, "Design and Analysis of Incipient Fault Diagnosis Schemes Using On-Line Approximators," *Proceedings of the 5th IEEE Mediterranean Conference on Control and Systems*, July 1997.
33. M. Polycarpou, A. Vemuri and A. Ciric, "Nonlinear Fault Diagnosis of Differential Algebraic Systems *Proceedings of the IFAC Symposium on Fault Detection, Supervision and Safety for Technical Processes: SAFEPROCESS'97*, vol. 1, pp. 510-515, August 1997.
34. M. Demetriou and M. Polycarpou, "Fault Diagnosis of Output-Induced Actuator Failures for a Flexible Beam with Collocated Input and Output," *Proceedings of the IFAC Symposium on Fault Detection, Supervision and Safety for Technical Processes: SAFEPROCESS'97*, vol. 2, pp. 897-902, August 1997.
35. T. Parisini, M. Polycarpou, M. Sanguineti, and A. Vemuri, "Robust Parametric and Non-Parametric Fault Diagnosis in Nonlinear Input-Output Systems," *Proceedings of the 1997 IEEE Conference on Decision and Control*, pp. 4481-4482, December 1997.
36. M. Demetriou and M. Polycarpou, "Fault Detection and Diagnosis of a Class of Actuator Failures via On-Line Approximators," *Proceedings of the 1997 IEEE Conference on Decision and Control*, pp. 3996-3997, December 1997.
37. (Invited) M. Polycarpou, M. Mears, and S. Weaver, "Adaptive Wavelet Control of Nonlinear Systems," *Proceedings of the 1997 IEEE Conference on Decision and Control*, pp. 3890-3895, December 1997.
38. (Invited) M. Demetriou and M. Polycarpou, "Fault Detection and Accommodation of 1-DOF Structural Systems," *Proceedings of the 12th ASCE Engineering Mechanics Conference*, pp. 1525-1528, May 1998.
39. A. Vemuri and M. Polycarpou, "On the Use of On-Line Approximators for Sensor Fault Diagnosis," *Proceedings of the 1998 American Control Conference*, pp. 2857-2861, June 1998.
40. M. Demetriou and M. Polycarpou, "Fault Detection, Diagnosis and Accommodation of Dynamical Systems with Actuator Failures via On-Line Approximators," *Proceedings of the 1998 American Control Conference*, pp. 2879-2883, June 1998.
41. (Invited--Keynote Speech) P. Pant, M. Polycarpou, P. Sankaranayanan, B. Li, X. Hu and A. Hossain, "Travel Time Prediction System (TIPS) for Freeway Work Zones," *Proceedings of the First ASCE International Conference on Traffic and Transportation Studies*, pp. 20-29, July 1998.
42. (Invited) M. Polycarpou and A. Vemuri, "Learning Approach to Fault Tolerant Control: An Overview," *Proceedings of the 1998 IEEE International Symposium on Intelligent Control (ISIC/CIRA/ISAS'98)*, pp. 157-162, September 1998.
43. S. Weaver, L. Baird and M. Polycarpou, "Preventing Unlearning During On-Line Training of Feedforward Networks," *Proceedings of the 1998 IEEE International Symposium on Intelligent Control (ISIC/CIRA/ISAS'98)*, pp. 359-364, September 1998.
44. (Invited) M. Polycarpou and A. Trunov, "Detectability Performance Properties of Learning-Based Nonlinear Fault Diagnosis," *Proceedings of the 1998 IEEE Conference on Decision and Control*, pp. 90-95, December 1998.
45. A. Trunov and M. Polycarpou, "Robust Fault Diagnosis of State and Sensor Faults in Nonlinear Multivariable Systems," *Proceedings of the 1999 American Control Conference*, pp. 608-612, June 1999.
46. (Invited) A. Trunov and M. Polycarpou, "Robust Nonlinear Fault Diagnosis: Application to Robotic Systems," *Proceedings of the 1999 IEEE Conference on Control Applications*, pp. 1424-1429, August 1999.
47. E. Morales, M. Polycarpou, N. Hemasilpin, and J. Bissler, "Adaptive Control of Peristaltic Pumps During Continuous Venovenous Hemofiltration," *Proceedings of the 1999 IEEE Conference on Control Applications*, pp. 1306-1311, August 1999 (Awarded the **Student Best Paper of the Conference**).
48. (Invited) A. Vemuri and M. Polycarpou, "Nonlinear Learning Approach to Robust Fault Diagnosis," *Proceedings of the 1999 European Control Conference*, September 1999.
49. M. Polycarpou, "Fault Accommodation of a Class of Nonlinear Dynamical Systems Using a Learning Approach," *Proceedings of the 1999 IEEE International Symposium on Intelligent Control*, pp. 185-190, September 1999.

50. (Invited) *M. Mears* and *M. Polycarpou*, "Stable Local Neural Control of Uncertain Systems," *Proceedings of the 1999 IEEE Conference on Decision and Control*, pp. 1691-1696, December 1999.
51. *X. Zhang*, *T. Parisini* and *M. Polycarpou*, "Robust Parametric Fault Detection and Isolation for Nonlinear Systems," *Proceedings of the 1999 IEEE Conference on Decision and Control*, pp. 3102-3107, December 1999.
52. *X. Zhang*, *M. Polycarpou* and *T. Parisini*, "Abrupt and incipient fault isolation of nonlinear uncertain systems," *Proceedings of the 2000 American Control Conference*, pp. 3713-3717, June 2000.
53. *M. Polycarpou*, "Design and stability analysis of a fault accommodation scheme for a class of nonlinear dynamical systems," *Proceedings of the IFAC Symposium on Fault Detection, Supervision and Safety for Technical Processes: SAFEPROCESS 2000*, pp. 733-738, June 2000.
54. *M. Polycarpou*, *T. Parisini* and *X. Zhang*, "Fault isolation of nonlinear uncertain Systems," *Proceedings of the IFAC Symposium on Fault Detection, Supervision and Safety for Technical Processes: SAFEPROCESS 2000*, pp. 739-744, June 2000.
55. *Z. Wang*, *M. Polycarpou* and *J. Uber*, "Decentralized Model Reference Adaptive Control of Water Quality in Water Distribution Networks," *Proceedings of the 2000 IEEE International Symposium on Intelligent Control*, pp. 127-132, July 2000.
56. *X. Zhang*, *M. Polycarpou* and *T. Parisini*, "Fault Isolation in a Class of Nonlinear Uncertain Input-Output Systems," *Proceedings of the 2001 American Control Conference*, pp. 1741-1746, June 2001.
57. *Y. Liu*, *K. Passino* and *M. Polycarpou*, "Stability Analysis of One-Dimensional Asynchronous Swarms," *Proceedings of the 2001 American Control Conference*, pp. 716-721, June 2001.
58. *M. Mears* and *M. Polycarpou*, "Stable, Controllable Neural Control of Affine Uncertain Systems," *Proceedings of the 2001 American Control Conference*, pp. 3543-3544, June 2001.
59. *M. Polycarpou*, *Y. Yang* and *K. Passino*, "A Cooperative Search Framework for Distributed Agents," *Proceedings of the 2001 IEEE International Symposium on Intelligent Control*, pp. 1-6, September 2001.
60. *Y. Liu*, *K. Passino* and *M. Polycarpou*, "Stability Analysis of One-Dimensional Asynchronous Mobile Swarms," *Proceedings of the 40th IEEE Conference on Decision and Control*, pp. 1077-1082, December 2001.
61. *X. Zhang*, *M. Polycarpou* and *T. Parisini*, "Integrated Design of Fault Diagnosis and Accommodation Schemes for a Class of Nonlinear Systems," *Proceedings of the 40th IEEE Conference on Decision and Control*, pp. 1448-1453, December 2001.
62. *Z. Wang*, *M. Polycarpou*, *J. Uber* and *F. Shang*, "Adaptive Periodic Control for Chlorine Residual Maintenance in Drinking Water Distribution Networks," *Proceedings of the 40th IEEE Conference on Decision and Control*, pp. 4069-4074, December 2001.
63. *Y. Liu*, *K. Passino* and *M. Polycarpou*, "Stability Analysis of M-Dimensional Asynchronous Swarms with a Fixed Communication Topology," *Proceedings of the American Control Conference*, pp. 1278-1283, May 2002.
64. *M. Brdys*, *K. Duzinkiewicz*, *T. Chang*, *M. Polycarpou*, *Z. Wang*, *J. Uber*, *M. Propato*, "Hierarchical Control of Integrated quality and Quantity in Drinking Water Distribution Systems," *Proceedings of International Scientific and Technical Conference on Technology, Automation and Control of Wastewater and Drinking Water Systems*, pp. 41-60, June 2002.
65. *M. Propato*, *J. Uber* and *M. Polycarpou*, "Control of Booster Disinfection Systems: Optimal Location of Actuators and Sensors," *Proceedings of International Scientific and Technical Conference on Technology, Automation and Control of Wastewater and Drinking Water Systems*, pp. 279-286, June 2002.
66. *Y. Yang*, *M. Polycarpou* and *A. Minai*, "Opportunistically Cooperative Neural Learning in Mobile Agents," *Proceedings of the 2002 World Congress on Computational Intelligence*, pp. 2638-2643, May 2002.
67. *X. Zhang*, *M. Polycarpou* and *T. Parisini*, "Fault-Tolerant Control of a Class of Nonlinear Systems," *Proceedings of the International Federation of Automatic Control 15th IFAC World Congress*, pp. 1291-1296, July 2002.

68. M. Flint, M. Polycarpou and E. Fernandez, "Cooperative Path-Planning for Autonomous Vehicles Using Dynamic Programming," *Proceedings of the International Federation of Automatic Control 15th IFAC World Congress*, pp. 1694-1699, July 2002.
69. Z. Wang, M. Polycarpou, J. Uber and F. Shang, "Disinfectant Residual Control of Multiple Nodes in Water Distribution Networks," *Proceedings of the International Federation of Automatic Control 15th IFAC World Congress*, pp. 2269-2274, July 2002.
70. Y. Yang, A. Minai and M. Polycarpou, "Decentralized Cooperative Search with UAV's Using Opportunistic Learning," *Proceedings of the AIAA Conference on Guidance, Navigation and Control (GNC'02)*, August 2002.
71. Y. Yang, A. Minai and M. Polycarpou, "Analysis of an Opportunistic Method for Cooperative Search by Autonomous Mobile," *Proceedings of the 2002 IEEE Conference on Decision and Control*, pp. 576-577, December 2002.
72. M. Flint, M. Polycarpou and E. Fernandez, "Cooperative Control for Multiple Autonomous UAV's Searching for Targets," *Proceedings of the 2002 IEEE Conference on Decision and Control*, pp. 2823-2828, December 2002.
73. M. Polycarpou, J. Farrell and M. Sharma, "On-Line Approximation Control of Uncertain Nonlinear Systems: Issues with Control Input Saturation," *Proceedings of the 2003 American Control Conference*, pp. 543-548, June 2003.
74. J. Farrell, M. Polycarpou and M. Sharma, "Adaptive Backstepping with Magnitude, Rate, and Bandwidth Constraints: Aircraft Longitudinal Control," *Proceedings of the 2003 American Control Conference*, pp. 3898-3904, June 2003.
75. J. Farrell, M. Sharma and M. Polycarpou, "On-Line Approximation Based Aircraft Longitudinal Control," *Proceedings of the 2003 American Control Conference*, pp. 1011-1016, June 2003.
76. A. Castillo, P. Zufiria, M. Polycarpou, M. Previdi and Parisini, "Fault Detection and Isolation Scheme in Continuous Time Nonlinear Stochastic Dynamical Systems," *Proceedings of the IFAC Symposium on Fault Detection, Supervision and Safety for Technical Processes: SAFEPROCESS 2003*, pp. 651-656, June 2003.
77. X. Zhang, T. Parisini and M. Polycarpou, "Sensor Bias Fault Isolation in a Class of Nonlinear Systems," *Proceedings of the IFAC Symposium on Fault Detection, Supervision and Safety for Technical Processes: SAFEPROCESS 2003*, pp. 657-662, June 2003.
78. C. Chrysostomou, A. Pitsillides, G. Hadjipollas, A. Sekercioglu and M. Polycarpou, "Fuzzy Explicit Marking for Congestion Control in Differentiated Services Networks," *Proceedings of the 8th IEEE Symposium on Computers and Communications (ISCC'2003)*, pp. 312-319, June 2003.
79. Y. Jin, A. Minai and M. Polycarpou, "Cooperative Real-Time Search and Task Allocation in UAV Teams," *Proceedings of the 2003 IEEE Conference on Decision and Control*, pp. 7-12, December 2003.
80. M. Flint, E. Fernandez and M. Polycarpou, "Cooperative Control for UAV's Searching Risky Environments for Targets," *Proceedings of the 2003 IEEE Conference on Decision and Control*, pp. 3567-3572, December 2003.
81. M. Sharma, J. Farrell, M. Polycarpou, N. Richards and D. Ward, "Backstepping Flight Control using On-line Function Approximation," *Proceedings of the AIAA Conference on Guidance, Control and Navigation (GNC 2003)*, 2003.
82. C. Chrysostomou, A. Pitsillides, A. Sekercioglu, M. Polycarpou and G. Hadjipollas, "Fuzzy Logic Congestion Control in TCP/IP Networks for Quality of Service Provisioning," *Proceedings of the International Conference on Next Generation Teletraffic and Wired/Wireless Advanced Networks (NEW2AN'04)*, pp. 235-243, February 2004.
83. M. Polycarpou, J. Farrell and M. Sharma, "Robust On-Line Approximation Control of Uncertain Nonlinear Systems Subject to Constraints," *Proceedings of the 9th IEEE International Conference on Engineering Complex Computer Systems (ICECCS 2004)*, pp. 66-74, April 2004.
84. C. Chrysostomou, A. Pitsillides, A. Sekercioglu, M. Polycarpou and G. Hadjipollas, "Fuzzy Logic Congestion Control in TCP/IP Differentiated Services Networks for Quality of Service Provisioning," *Proceedings of the 2004 International Conference on Information and Communication Technologies: from Theory to Applications*, pp. 373-374, April 2004.

85. C. Chrysostomou, A. Pitsillides, G. Hadjipollas, M. Polycarpou and A. Sekercioglu, "Fuzzy Logic Control for Active Queue Management in TCP/IP Networks," Proceedings of the 12th Mediterranean Conference on Control and Automation (MED '04), June 2004.
86. Y. Zhao, J. Farrell and M. Polycarpou, "Localized Adaptive Bounds for On-Line Approximation Based Control," Proceedings of the 2004 American Control Conference, pp. 590-595, June 2004.
87. J. Farrell, M. Polycarpou and M. Sharma, "On-Line Approximation Based Control of Uncertain Nonlinear Systems with Magnitude, Rate and Bandwidth Constraints on the States and Actuators," Proceedings of the 2004 American Control Conference, pp. 2557-2562, June 2004.
88. Y. Yang, M. Polycarpou and A. Minai, "Decentralized Cooperative Search for UAV's in Uncertain Environments," Proceedings of the 2004 American Control Conference, pp. 5558-5563, June 2004.
89. M. Flint, E. Fernandez and M. Polycarpou, "A Probabilistic Framework for Passive Cooperation Among UAV's Performing a Search," Proceedings of the 16th International Symposium on Mathematical Theory of Networks and Systems (MTNS 2004), July 2004.
90. M. Polycarpou, X. Zhang, R. Xu, Y. Yang, C.-M. Kwan, "A Neural Network Based Approach to Adaptive Fault Tolerant Flight Control," Proceedings of the 2004 IEEE International Symposium on Intelligent Control (ISIC '04), pp. 61-66, September 2004.
91. C. Chrysostomou, A. Pitsillides, G. Hadjipollas, M. Polycarpou and A. Sekercioglu, "Congestion Control in Differentiated Services Networks using Fuzzy Logic," Proceedings of the 2004 IEEE Conference on Decision and Control, pp. 549-556, December 2004.
92. M. Flint, E. Fernandez and M. Polycarpou, "Efficient Bayesian Methods for Updating and Storing Uncertain Search Information for UAV's," Proceedings of the 2004 IEEE Conference on Decision and Control, pp. 1093-1098, December 2004.
93. Y. Jin, Y. Liao, M. Polycarpou and A. Minai, "Balancing Search and Target Response in Cooperative UAV Teams," Proceedings of the 2004 IEEE Conference on Decision and Control, pp. 2923-2928, December 2004.
94. E. Franco, T. Parisini and M. Polycarpou, "Cooperative Control of Discrete-Time Agents with Delayed Information Exchange: a Receding-Horizon Approach," Proceedings of the 2004 IEEE Conference on Decision and Control, pp. 4274-4279, December 2004.
95. Y. Yang, A. Minai and M. Polycarpou, "Evidential Map-Building Approaches for Multi-UAV Cooperative Search," Proceedings of the 2005 American Control Conference, pp. 116-121, June 2005.
96. E. Franco, T. Parisini and M. Polycarpou, "Stable Receding-Horizon Cooperative Control of a Class of Distributed Agents," Proceedings of the 2005 American Control Conference, pp. 4673-4678, June 2005.
97. Y. Jin, Y. Liao, A. Minai and M. Polycarpou, "Impact of System Design Parameters on Performance of Cooperative Agent Teams," Proceedings of the 2005 IEEE Symposium on Intelligent Control, pp. 616-621, June 2005.
98. X. Zhang, M. Polycarpou, R. Xu and C. Kwan, "Actuator Fault Diagnosis and Accommodation for Improved Flight Safety," Proceedings of the 2005 IEEE Symposium on Intelligent Control, pp. 640-645, June 2005.
99. Y. Jin, Y. Liao, A. Minai and M. Polycarpou, "Information Sharing in Cooperative Unmanned Aerial Vehicle Teams," Proceedings of the 2005 IEEE Conference on Decision and Control and 2005 European Control Conference, pp. 90-95, December 2005.
100. E. Franco, T. Parisini and M. Polycarpou, "Cooperative Control of Distributed Agents with Nonlinear Dynamics and Delayed Information Exchange: a Stabilizing Receding-Horizon Approach," Proceedings of the 2005 IEEE Conference on Decision and Control and 2005 European Control Conference, pp. 2206-2211, December 2005.
101. Y. Liao, Y. Jin, A. Minai and M. Polycarpou, "Sporadic Pairwise Synchronization for Decentralized Decision-Making in Mobile Agent Teams," Proceedings of the 2006 American Control Conference, pp. 3531-3536, June 2006.
102. R. Selmic, M. Polycarpou and T. Parisini, "Actuator Fault Detection in Nonlinear Uncertain Systems using Neural On-Line Approximation Models," Proceedings of the 2006 American Control Conference, pp. 5123-5128, June 2006.
103. D. Eliades and M. Polycarpou, "Iterative Deepening of Pareto Solutions in Water Sensor Networks," in ASCE 8th Annual Water Distribution System Analysis Symposium, August 2006.

104. R. Ferrari, T. Parisini and M. Polycarpou, "A Fault Detection Scheme for Distributed Nonlinear Uncertain Systems," *Proceedings of the 2006 IEEE Symposium on Intelligent Control*, pp. 2742-2747, October 2006.
105. E. Franco, R. Olfati-Saber, T. Parisini and M. Polycarpou, "Distributed Fault Diagnosis using Sensor Networks and Consensus-based Filters," *Proceedings of the 2006 IEEE Conference on Decision and Control*, pp. 386-391, December 2006.
106. R. Ferrari, T. Parisini and M. Polycarpou, "Distributed Fault Diagnosis with Overlapping Decompositions and Consensus Filters," *Proceedings of the 2007 American Control Conference*, pp. 693-698, July 2007.
107. R. Selmic, M. Polycarpou and T. Parisini, "Output Feedback Actuator Fault Detection in Nonlinear Systems Using Neural Networks," *Proceedings of the European Control Conference 2007*, pp. 3232-3239, July 2007.
108. D. Eliades and M. Polycarpou, "Multi-Objective Optimization Of Water Quality Sensor Placement In Drinking Water Distribution Networks," *Proceedings of the European Control Conference 2007*, pp. 1626-1633, July 2007.
109. R. Abdullah, A. Hussain and M. Polycarpou, "Fuzzy Logic based Switching and Tuning Supervisor for a Multi-variable Multiple Controller," *Proceedings of the 2007 IEEE International Conference on Fuzzy Systems*, pp. 1-6, July 2007.
110. D. Eliades, E. Kyriakides and M. Polycarpou, "Enhanced Robustness in Model Predictive Control of Water Quality Using Adaptive Estimation Methods," *Proceedings of the 2007 Computer Control for the Water Industry Conference (CCWI 2007)*, pp. 1626-1633, September 2007.
111. R. Ferrari, T. Parisini and M. Polycarpou, "A Fault Detection and Isolation Scheme for Nonlinear Uncertain Discrete-Time Systems," *Proceedings of the 2007 IEEE Conference on Decision and Control*, pp. 1009-1014, December 2007.
112. N. Nicolaou, J. Georgiou, and M. Polycarpou, "Autoregressive features for a thought-to-speech converter," in *Proc. BIODEVICES '08*, vol. 1, pp.11-16, January, 2008.
113. T. Theocharides, M.K. Michael, M. Polycarpou, A. Dingankar, "A Novel System-Level On-Chip Resource Allocation Method for Manycore Architectures" *Proceedings of the 2008 IEEE Annual Symposium on VLSI (ISVLSI 2008)*, pp. 99-104, April 2008.
114. J. Farrell, M. Polycarpou, M. Sharma, "Command Filtered Backstepping," *Proceedings of the 2008 American Control Conference*, pp. 1923-1928, June 2008.
115. R. Ferrari, T. Parisini and M. Polycarpou, "A Robust Fault Detection and Isolation Scheme for a Class of Uncertain Input-output Discrete-time Nonlinear Systems," *Proceedings of the 2008 American Control Conference*, pp. 2804-2809, June 2008.
116. P. Panagi, M. Polycarpou, "Decentralized Adaptive Approximation Based Control of a Class of Large-Scale Systems," *Proceedings of the 2008 American Control Conference*, pp. 4191-4196, June 2008.
117. X. Zhang, M. Polycarpou, T. Parisini, "Isolation of Process and Sensor Faults for a Class of Nonlinear Systems," *Proceedings of the 2008 American Control Conference*, pp. 4298-4303, June 2008.
118. N. Nicolaou, S. Petroudi, J. Georgiou, M. Polycarpou and M. Brady, "Digital Mammography: Towards Pectoral Muscle Removal via Independent Component Analysis", *IET 4th Int. Conf. On Advances in Medical and Signal Processing, MEDSIP 2008*, July 2008.
119. M. Markou, E. Kyriakides, and M. Polycarpou, "24-hour ahead short term load forecasting using multiple MLP," *International Workshop on Deregulated Electricity Market Issues in South-Eastern Europe (DEMSEE08)*, paper no. 137, pp. 1-6, Sep. 2008.
120. D. Eliades and M. Polycarpou, "Security of Water Infrastructure Systems," *Proceedings of the 3rd International Workshop on Critical Information Infrastructures Security (CRITIS'08)*, October 2008.
121. D. Eliades and M. Polycarpou, "Security Issues in Drinking Water Distribution Networks," *Proceedings of the International Workshop on Computational Intelligence in Security for Information Systems (CISIS'08)*, *Advances in Computing Series*, Springer, pp. 69-76, October 2008.
122. P. Panagi, M. Polycarpou, "Decentralized Adaptive Approximation Based Control with Safety Scheme Outside the Approximation Region," *Proceedings of the 2008 IEEE Conference on Decision and Control*, pp. 92-97, December 2008.

123. X. Zhang, M. Polycarpou, T. Parisini, "Adaptive Fault-Tolerant Control for a Class of Nonlinear MIMO Systems," *Proceedings of the 2008 IEEE Conference on Decision and Control*, pp. 398-403, December 2008.
124. D. Eliades, B. Charalambous and M. Polycarpou, "A Security-Oriented Manual Quality Sampling for Water Systems," to appear in *Proceedings of the 3rd Panhellenic Conference of Electrical and Computer Engineering (SFHMMY3.0)*, April 2009.
125. P. Panagi, M. Polycarpou, "Decentralized Fault Accommodation of a Class of Interconnected Nonlinear Systems using an Adaptive Approximation Approach," *Proceedings of the 17th Mediterranean Conference on Control and Automation*, pp. 546-551, June 2009.
126. D. Eliades, B. Charalambous and M. Polycarpou, "A Security-Oriented Manual Quality Sampling Methodology," to appear in *Proceedings of the European Water Resources Association 7th International Conference: Water Resources Conservation and Risk Reduction Under Climatic Instability (EWRA2009)*, June 2009.
127. M. Polycarpou, "Fault Diagnostics and Security of Critical Infrastructure Systems," *Proceedings of the 7th IFAC Symposium on Fault Detection, Supervision and Safety of Technical Processes (SAFEPROCESS 2009)*, pp. 203-204, July 2009.
128. X. Zhang, M. Polycarpou, T. Parisini, "Fault Diagnosis of a Class of Uncertain Nonlinear Systems with Lipschitz Nonlinearities," *Proceedings of the 7th IFAC Symposium on Fault Detection, Supervision and Safety of Technical Processes (SAFEPROCESS 2009)*, pp. 12-17, July 2009.
129. Y. Liao, A. Minai and M. Polycarpou, "On the Varying Benefit of Communication between Mobile Agents in a Decentralized Team," *Proceedings of the 3rd IEEE Multi-conference on Systems and Control (MSC 2009)*, pp. 908-913, July 2009.
130. C. Laoudias, D. Eliades, P. Kempfi, C. Panayiotou and M. Polycarpou, "Indoor Localization Using Neural Networks with Location Fingerprints," to appear in the *Proceedings of the 19th International Conference on Artificial Neural Networks (ICANN'09)*, September 2009.
131. X. Zhang, M. Polycarpou, T. Parisini, "Decentralized Fault Detection in a Class of Large-Scale Nonlinear Uncertain Systems," to appear in the *Proceedings of the 48th IEEE Conference on Decision and Control (CDC'09)*, December 2009.

F. Other Publications

1. J. Zurada and M. Polycarpou, (Editorial) "IEEE Transactions on Neural Networks: Editorial Report and Passing the Baton," *IEEE Transactions on Neural Networks*, vol. 15, no. 1, pp. 1-5, January 2004.
2. M. Polycarpou, (Editorial) "A New Era for the IEEE Transactions on Neural Networks," *IEEE Transactions on Neural Networks*, vol. 19, no. 1, pp. 1-2, January 2008.

G. Books in Preparation

1. M. Polycarpou, T. Parisini, A. Vemuri and X. Zhang, *Nonlinear Fault Diagnosis*, book in preparation (expected to be published in 2009 --- 35% completed).

H. Patents Issued

1. J. Bissler, M. Polycarpou, N. Hemasilpin and E. Morales, "Hemofiltration System", U.S. Patent 6,780,322, issued on August 24, 2004.
2. J. Bissler, M. Polycarpou, N. Hemasilpin and E. Morales, "Hemofiltration System", European Patent 04078443.1-2318, issued on March 23, 2005.
3. A. Pesce, M. Polycarpou, Z. Wang, G. Dimeski and P. Hickman, "Methods and Apparatus for Detecting Artifactual Output from a Chemical Analyzer", U.S. Patent 6,925,391, issued on August 2, 2005.