



Elias B. Kosmatopoulos

Personal Data

Date of Birth:	April 1 st 1968
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Short Vitae

Elias B. Kosmatopoulos

Short Vita

Elias B. Kosmatopoulos received the Diploma, M.Sc. and Ph.D. degrees from the Technical University of Crete, Greece, in 1990, 1992, and 1995, respectively. Dr. Kosmatopoulos is a Professor with the Department of Electrical and Computer Engineering at the Democritus University of Thrace, Greece (www.ee.duth.gr). He has been an Assistant Professor with the Department of Production Engineering and Management, Technical University of Crete (TUC), Greece and Deputy Director of the Dynamic Systems and Simulation Laboratory at TUC. Prior to joining TUC, he was Research Assoc./Assist. Professor with the Department of Electrical Engineering-Systems, University of Southern California (USC) and a Postdoctoral Fellow with the Department of Electrical & Computer Engineering, University of Victoria, B.C., Canada.

Dr. Kosmatopoulos' research interests are in the areas of nonlinear and adaptive control, robotics, energy-efficient buildings and intelligent transportation systems. He is the author of some 40 journal papers and over 100 book chapters and conference publications. Among his contributions, the most significant are the following:

- Analysis of the approximation and stability properties of **Recurrent High Order Neural Networks (RHONNS)**.
- Globally convergent learning laws for **Recurrent High Order Neural Networks (RHONNS)**.
- **Adaptive controllers** for unknown nonlinear systems.

- An **Adaptive Fine-Tuning (AFT)** tool for
 - rapid fully-automated fine tuning of highly-nonlinear and complex Large-Scale Control Systems (LSCSs)
 - Cognitive Adaptive-based Optimization (CAO) of multi-robot applications.
- A **Convex Control Design (ConvCD)** tool that provides arbitrarily-close-to-the-optimal control design for highly-nonlinear and complex LSCSs and Multi-Robot Applications.
- AGILE, **re-configurable and self-adaptable LSCSs**.
- Real-life large-scale control implementations in various areas such as **segmented telescopes, traffic control systems, energy efficient buildings and swarms of flying or underwater robotic vehicles**.

Dr. Kosmatopoulos has been involved in various applied research projects virtual reality, intelligent manufacturing systems, fault detection in TV cable plants, telecommunications, control of space telescopes, control of air vehicles and hypersonic vehicles, mitigation of earthquake effects to civil structures, intelligent highway systems, intelligent transportation systems, traffic control, agile ports, energy positive buildings and robotic swarms. While in the U.S. he was involved as the Principal Investigator, Co-Principal Investigator or Technical Consultant in many research projects funded by NASA, Department of Transportation and Air Force or the private sector. Currently he is involved in research projects (funded by the EU, the Greek Secretariat of Research & Development and the private sector) involving Energy Positive Buildings, Robotic Swarms and Intelligent Transportation Systems .

Educational Record

- Ph.D. in Electronics & Computer Engineering, Technical University of Crete, Greece, June 1995.
- M.Sc. in Electronics & Computer Engineering, Technical University of Crete, Greece, November 1992.
- Diploma in Production & Management Engineering, Technical University of Crete, Greece, September 1990.

Work Experience

Academic Positions

August 2014 - present	Professor	Department of Electrical and Computer Engineering	Democritus University of Thrace, Greece
December 2009 – August 2014	Associate Professor	Department of Electrical and Computer Engineering	Democritus University of Thrace, Greece
December 2009 – present	Collaborative Professor	Information Technologies Institute	Center for Research and Technology, Hellas
2006 –2009	Assistant Professor	Department of Production and Management Engineering	Technical University of Crete, Greece
2001-2006	Lecturer	Department of Production and Management Engineering	Technical University of Crete, Greece
1999-2000	Research Associate Professor	Department of Electrical Engineering - Systems	University of Southern California, Los Angeles, USA
1997-1999	Research Assistant Professor	Department of Electrical Engineering – Systems	University of Southern California, Los Angeles, USA
1996-1997	Research Associate	Center For Advanced Transportation Technologies	University of Southern California, Los Angeles, CA, USA
1995-1996	Postdoctoral Fellow	Department of Electrical and Computer Engineering	University of Victoria, Victoria, BC, Canada

Technical Consultant

1. 2007-2009, VicRoads, Australia, Implementation of a Ramp Metering Control System in Melbourne, Australia.
2. 2004.NAMA S.A., Greece, Specification of Requirements for Public Transport Priority Provision at the TRAM line in the city of Athens.
3. 2002-2006, ATKINS Transport Systems/U.K. Highways Agency, U.K., (a) Adaptive Ramp Metering Control for U.K. Motorways, (b) Variable Speed Limit Control for U.K. Motorways.
4. 2001-2003, DHV, Amersfoort, The Netherlands, Specification of Requirements for Public Transport Priority Provision at the TRAM lines in the cities of Jerusalem and Tel Aviv, Israel.
5. 2001, IBI Group, Ltd, U.K., Specification of Requirements for the Traffic Control System of Athens.
6. 1997-2000, California State University, Los Angeles, U.S.A.(a) Design of Controllers for the Mitigation of the Effects of Earthquakes in Civil Structures, NASA Project NAG-1-2029, (b) Hypersonic Air-vehicle Control, NASA Project # NAG2-136.
7. 1996-1997, Center for Autonomous Control Engineering, New Mexico, U.S.A.,(a) Bit Error Rate Estimation, U.S. AIR-FORCE Project F49620-96-1-0306,(b) Design and implementation of fuzzy controllers.
8. 2000, Acorn Technologies, Inc., U.S.A., Design of Hard Disc Controllers.
9. 1997-1999, PI Systems, Inc., U.S.A., Design of Adaptive Control Systems.

Applied Research Experience:

A. Principal Investigator or co-Principal Investigator

1. 2015-2018, European Commission H2020 FIRE+, **RAWFIE**, Road-, Air- and Water-based Future Internet Experimentation., **250,000€**.
2. 2013-2015, (Project Coordinator), European Commission FP7-ICT-2013.3.4 – Engineering of Networked Monitoring and Control Systems, **Local4Global**, Systems-of-Systems that act Locally to Optimize Globally, **2,516,000€** (my group's budget is **480,000€**)
3. 2012-2014 (Principal Investigator: D. Rovas), European Commission FP7-ICT-2007-9.6.3, Energy Efficiency, **BaaS**, Buildings as a Service (ecosystem), **393,800€**
4. 2012-2015 (Principal Investigator: S. Hajieftymiades), Greek Secretariat of Research and Technology, **SWeFS**, Sensor Web Fire Shield, **600,000€** (my group's budget is around **30,000€**).
5. 2011-2014 (Project Coordinator). European Commission, FP7-ICT-2009.2.1: Cognitive Systems and Robotics, C. New ways of designing and implementing complete robotic systems, **NOPTILUS**, Autonomous, Self-learning, Optimal and Complete Underwater Systems, **3,780,000€** (my group's budget is **718,000€**).
6. 2010-2012 (Project Coordinator). European Commission FP7-ICT-5-3.5 – Engineering of Networked Monitoring and Control Systems, **AGILE**, Rapidly-deployable, Self-tuning, Self-reconfigurable, Nearly-optimal Control Design for Large-Scale Nonlinear Systems, **1,300,000€** (my group's budget is **375,000€**).
7. 2010-2012 (Project Coordinator with D. Rovas). European Commission FP7-ICT-2007-9.6.3, Energy Efficiency, **PEBBLE**, Positive-Energy Buildings thru Better Control Decisions, **2,395,375€** (my group's budget is **496,000€**).
8. 2009-2011. European Commission FP7-ICT-2007-3.2.2, Cognitive Systems, Interaction, robotics, **sFLY**, Swarm of Micro Flying Robots, **420,700 €**.
9. 2009. (with Professor Markos Papageorgiou). European Commission, **Study on Energy Efficiency in Road Transport**, **25,000 €**.
10. 2007-2008. (with Professor Markos Papageorgiou). **CRINNO**. Crete Innovative Region – Innovative Actions, and the Greek Secretariat for Research and Technology, **Real-time Traffic Info Systems for Taxis**, **20,441€**.
11. 2006-2010, European Commission, FP6-2004-IST-4. **COOPERS**. Co-operative Networks for Intelligent Road Safety, **72,320€+17,588€** (matching funds from Greek Secretariat for Research and Technology).
12. 2006-2007, Greek Secretariat for Research and Technology, **PAVET 05-85**. Real-time traffic estimation and prediction using Floating Car Data (FCD), **41,600 €**.
13. 2005-2009. (with Professor Markos Papageorgiou). Greek Secretariat for Research and Technology. **PENED**. Development and evaluation of a new real-time traffic signal control strategy for urban road networks, **45,000 €**.

14. 2005-2006. Technical University of Crete Research Funds Committee (RFC).RFC-Research Support 2004: Development of a user-friendly environment for the optimal parameter selection in an adaptive control system. **5,000 €.**
15. 2005-2009. (with Professor Markos Papageorgiou). Greek Secretariat for Research and Technology.**PENED.** Development and evaluation of a central flow control strategy for sewer networks with emphasis on special needs and potential applications in Greece.**45,000 €.**
16. 2005-2007.(with Professor Markos Papageorgiou). Greek Secretariat for Research and Technology.**PYTHAGORAS.** Development of an integrated motorway network control system and its evaluation via microscopic simulation. **60,000 €.**
17. 2004-2007. (with Professor Markos Papageorgiou). European Commission (DG EDUC), Leonardo da Vinci Programme, **ETNITE.** European network for training and education in Intelligent Transportation Systems. **15,500 €.**
18. 2001-2004. (Principal Investigator: Markos Papageorgiou). European Commission (DG XIII), R&D Programme Information Society Technologies. **EYE IN THE SKY.** Advanced Data Fusion for Traffic Monitoring and Prediction. **88,374 € +15,500€** (matching funds from Greek Secretariat for Research and Technology).
19. 1999-2002. (Principal Investigator: Petros Ioannou). NSF (National Science Foundation). On-line Learning and Control of Partially-Known and Unknown Nonlinear Systems, **\$297,700.**

B. Experienced Researcher

1. 2008-2011.(Principal Investigator: Markos Papageorgiou). European Commission FP7- ICT-2007.6.2.2.**NEARCTIS.** Network of Excellence for Advanced Road Cooperative Traffic management in the Information Society, **200,000 €**
2. 2004-2007. (Principal Investigator: Markos Papageorgiou). European Commission (DG INFSO), R&D Programme Information Society Technologies. **EURAMP.** Ramp Metering for Motorway Networks.**425,000€+13,000€** (matching funds from Greek Secretariat for Research and Technology).
3. 2004-2006. (Principal Investigator: Markos Papageorgiou) European Commission (DG TREN), FP6-2002-Transport. **CONNECT.** Network of excellence for Coordination of concepts for new collective transport.**8,400 €+500€** (matching funds from Greek Secretariat for Research and Technology).
4. 2001-2004. (Principal Investigator: Markos Papageorgiou) European Commission (DG XIII), R&D Programme Information Society Technologies. **SMART NETS.** Implementation and Field-Evaluation of the Urban Traffic Control Strategy TUC in Southampton (U.K.), Munich (D) and Chania (GR).**430,000 €+85000€** (matching funds from Greek Secretariat for Research and Technology).
5. 2001-2005.(Principal Investigator: Markos Papageorgiou). European Commission (DG XIII), R&D Programme Information Society Technologies. **RHYTHM.** Motorway Traffic Surveillance and Control Employing Video Sensor Technology.**246,000€+47,000€** (matching funds from Greek Secretariat for Research and Technology).
6. 2001-2004. Principal Investigator: Markos Papageorgiou. European Commission (DG XIII), R&D Programme Information Society Technologies. **EYE IN THE SKY.** Advanced Data Fusion for Traffic Monitoring and Prediction. **88,374 € +15,500€** (matching funds from Greek Secretariat for Research and Technology).
7. 1999. (Principal Investigator: Petros Ioannou). USTRANSCOM/MARAD and CCDOTT at California State University, Long Beach; CATT, USC, Los Angeles, CA. Agile Port Technology Integration,**\$545,000.**

8. 1999. (Principal Investigator: Petros Ioannou). USTRANSCOM/MARAD and CCDOTT at California State University, Long Beach; CATT, USC, Los Angeles, CA. Agile Port Technology Integration. **\$320,000**.
9. 1997-2000. (Principal Investigator: Petros Ioannou). NASA, grant #NAGW-4103, Adaptive and Neural Network methods for Decentralized Control of a Large Segmented Reflector Telescope, **\$300,000**.

C. Research Associate

1. 1995-1996. (Principal Investigator: Nikitas Dimopoulos). Canadian Cable Labs Fund and NSERC through the Collaborative R & D Program. Fault Diagnosis and Identification in Cable Television Networks, VICTORIA, BC, CANADA,.
2. 1994-1995. (Principal Investigator: Manolis Christodoulou). ESPRIT BASIC RESEARCH funded by the European Commission. **HIMAC**. Hierarchical Management and Control in Manufacturing Systems.

Patents

1. P.A. Ioannou, E.B. Kosmatopoulos, and A. M. Despain, *Servo Control Apparatus and Method using Absolute Value Input Signals*, U.S. patent No. 6,545,836 B1, April 8, 2003.

Citations

- According to **ISI Web of Science** (last time updated: November 3, 2016). Sum of Times Cited: **1542**. **H-index=20**.
- According to **Scopus** (last time updated: November 3, 2016). Sum of Times Cited: **2184**. **H-index=23**.
- According to **Publish or Perish** (last time updated: November 3, 2016), search query: "e kosmatopoulos" or "b kosmatopoulos"). Sum of Times Cited: **4266**. **H-index=29**.

Journal Publications

1. E. B. Kosmatopoulos and M. A. Christodoulou, Filtering, Prediction, & Learning Properties of ECE Neural Networks, **IEEE Transactions on Systems, Man, and Cybernetics**, Vol. 24, no. 7, pp. 971-981, 1994.
2. E. B. Kosmatopoulos and M. A. Christodoulou, The Boltzmann G-RHONN: A Learning Machine for Estimating Unknown Probability Distributions, **Neural Networks**, Vol. 7, no. 2, pp. 271-278, 1994.
3. E. B. Kosmatopoulos and M. A. Christodoulou, Stability, Robustness, and Approximation Properties of Gradient Recurrent High Order Neural Networks, **International Journal of Adaptive Control and Signal Processing**, Vol. 8, pp. 393-406, 1994.
4. E. B. Kosmatopoulos, M. M. Polycarpou, M. A. Christodoulou, and P. A. Ioannou, High-Order Neural Network Structures for Identification of Dynamical Systems, **IEEE Transactions on Neural Networks**, Vol. 6, no. 2, pp. 422-431, 1995.
5. E. B. Kosmatopoulos and M. A. Christodoulou, Structural Properties of Gradient Recurrent High-Order Neural Networks, **IEEE Transactions on Circuits And Systems-II: Analog and Digital Signal Processing**, Vol. 42, no. 9, pp. 592-603, 1995.
6. E. B. Kosmatopoulos and M. A. Christodoulou, Convergence Properties of a Class of Learning Vector Quantization Algorithms, **IEEE Transactions on Image Processing**, Vol. 5, no. 2, pp. 361-369, 1996.
7. E. B. Kosmatopoulos and M. A. Christodoulou, Recurrent Neural Networks for Approximation of Fuzzy Dynamical Systems **International Journal of Intelligent Control & Systems**, Vol. 1, no.2, pp. 223-233, 1996.
8. E. B. Kosmatopoulos and M. A. Christodoulou, High Order Neural Networks for Learning of Robot Contact Surface Shape, **IEEE Transactions on Robotics and Automation**, Vol. 13, no. 3, pp. 451-455, 1997.
9. E. B. Kosmatopoulos, M. A. Christodoulou, and P. A. Ioannou, Dynamical Neural Networks that Ensure Exponential Error Convergence. See also Erratum, **Neural Networks**, Vol. 10, no. 2, pp. 299-314, 1997; Erratum, Vol. 11, pp. 1139-1140, 1998.
10. E. B. Kosmatopoulos, Universal Stabilization using Control Lyapunov Functions, Adaptive Derivative Feedback and Neural Network Approximators, **IEEE Transactions on Systems, Man, and Cybernetics**, Vol. 28B, no. 3, pp. 472-477, 1998.
11. E. B. Kosmatopoulos and P. A. Ioannou, A Switching Adaptive Controller for Feedback Linearizable Systems, **IEEE Transactions on Automatic Control**, Vol. 44, no. 4, pp. 742-750, 1999.
12. Y. Zhang, E. B. Kosmatopoulos, P.A. Ioannou, and C. C. Chien, Autonomous Intelligent Cruise Control using Front and Back Information for Tight Vehicle Following

- Manoeuvres, *IEEE Transactions on Vehicular Technology*, Vol. 48, no. 1, pp. 319-328, 1999.
13. K. Li, E. B. Kosmatopoulos, P. A. Ioannou and H. Boussallis, Centralized, decentralized, and overlapping approaches for the control of a segmented telescope, *IEEE Control Systems Magazine*, Vol. 20, no. 5, pp. 59-72, 2000.
 14. Jula, E. B. Kosmatopoulos, and P. A. Ioannou, Lane Change/Merge Crash Avoidance Analysis, *IEEE Transactions on Vehicular Technology*, Vol. 49, no. 6, pp. 2295-2308, 2000.
 15. E. B. Kosmatopoulos, A. W. Smyth, S. F. Masri and A. G. Chassiakos, Robust Adaptive Neural Estimation of Restoring Forces in Nonlinear Structures, *ASME Journal of Applied Mechanics*, Vol. 68, no. 6, pp. 880-893, 2001.
 16. A. Kanaris, E. B. Kosmatopoulos, and P. A. Ioannou, Collision-free lane changing and merging in automated highway systems, *IEEE Transactions on Vehicular Technology*, Vol. 50, No.6, pp. 1568-1582, 2001.
 17. E. B. Kosmatopoulos and P. A. Ioannou, Robust Adaptive Control of Multi Input Nonlinear Systems, *IEEE Transactions on Automatic Control*, Vol. 47, no. 4, pp. 610-624, 2002.
 18. A.W. Smyth, E.B. Kosmatopoulos, S.F., Masri, A.G., Chassiakos and T.K., Caughey, Development of Adaptive Modeling Techniques for Nonlinear Hysteretic Systems, *International Journal of Nonlinear Mechanics*, Vol. 37, no. 8, pp. 1435-1451, 2002.
 19. P.A. Ioannou, E.B. Kosmatopoulos, and A.M. Despain, Position Error Signal Estimation at High Sampling Rates Using Data and Servo Sector Measurements, *IEEE Transactions on Control Systems Technology*, Vol. 11, no. 3, pp. 325-334, 2003.
 20. E. Smaragdis, M. Papageorgiou, and E. B. Kosmatopoulos, A flow-maximizing adaptive local ramp metering strategy, *Transportation Research – Part B*, Vol. 38B, pp. 251-270, 2004.
 21. J.-S. Pei, A.W. Smyth, and E.B. Kosmatopoulos, Analysis and Modification of Volterra/Wiener Neural Networks for the Adaptive Identification of Nonlinear Hysteretic Dynamic Systems, *Journal of Sound and Vibration*, Vol. 275, pp. 693-718, 2004.
 22. E.B. Kosmatopoulos, M. Papageorgiou, D. Manolis, J. Hayden, R. Higginson, K. McKabe, N. Rayman, Real-time estimation of the critical occupancy for maximum motorway throughput, *Transportation Research Record*, no. 1959, pp.65-76, 2006.
 23. E.B. Kosmatopoulos, M. Papageorgiou, V. Dinopoulou, C. Bielefeldt, R. Morris, J. Mueck, A. Richards, F. Weichenmeier, Comparative field evaluation of the signal control strategy TUC in three traffic networks, *Transportation Research – Part A*, Vol. 45, no. 5, pp. 399-413, 2006.
 24. M. Papageorgiou, E. B. Kosmatopoulos, I. Papamichail, and Y. Wang, ALINEA Maximises Throughput: An Answer to Flawed Criticism, *Traffic Engineering and Control*, Vol. 48, No. 6, pp. 271-276, 2007.
 25. E.B. Kosmatopoulos, Papageorgiou, M., Vakouli, A. Kouvelas, A., Adaptive fine-tuning of nonlinear control systems with application to the urban traffic control strategy TUC, *IEEE Transactions on Control Systems Technology*, Vol. 15, no. 6, pp. 991-1002, 2007.
 26. Papamichail, E. B. Kosmatopoulos, M. Papageorgiou, . Wang, A Misapplication of the Local Ramp Metering Strategy ALINEA, *IEEE Transactions on Intelligent Transportation Systems*, Vol. 9, no. 2, pp. 360-365, 2008.
 27. E.B. Kosmatopoulos, Adaptive Control Design based on Adaptive Optimization Principles, *IEEE Transactions on Automatic Control*, Vol. 53, No. 11, pp. 2680-2685, 2008.

28. M. Papageorgiou, E. B. Kosmatopoulos and I. Papamichail, Effects of Variable Speed Limits on Motorway Traffic Flow, **Transportation Research Record**, no. 2047, pp., pp. 37-48, 2008.
29. E.B. Kosmatopoulos, An adaptive optimization scheme with satisfactory transient performance, **Automatica**, Vol. 45, No. 3, pp. 716-723, 2009.
30. E.B. Kosmatopoulos and A. Kouvelas, Large-Scale Nonlinear Control System Fine-Tuning through Learning, **IEEE Transactions Neural Networks**, Vol. 20, No. 6, pp. 1009-1023, 2009.
31. K. Aboudolas, M. Papageorgiou and E. B. Kosmatopoulos, Store-and-forward based methods for the signal control problem in large-scale congested urban road networks, **Transportation Research – Part C**, vol. 17, no. 2, pp. 163-174, 2009.
32. M. Protopapas and E. B. Kosmatopoulos, Determination of sequential best replies in n-player games by genetic algorithms, **International Journal of Applied Mathematics and Computer Sciences**, 2009.
33. K. Aboudolas, M. Papageorgiou, A., Kouvelas, and E.B. Kosmatopoulos, A rolling-horizon quadratic-programming approach to the signal control problem in large-scale congested urban road networks, **Transportation Research – Part C**, vol. 18, no. 5, pp. 680-694, 2010.
34. E. B. Kosmatopoulos, Control of Unknown Nonlinear Systems with Efficient Transient Performance using Concurrent Exploitation and Exploration. **IEEE Transactions on Neural Networks**, vol. 21, no. 8, pp. 1245-1261, Aug. 2010.
35. E. B. Kosmatopoulos, CLF-based Control Design for Unknown Multi-Input Nonlinear Systems with Good Transient Performance, **IEEE Transactions on Automatic Control**, vol. 55, no. 11, Nov. 2010.
36. W. Jr. Kraus, F. de Souza, R.C. Carlson, L. Dantas, M. Papageorgiou, E. Camponogara, E.B. Kosmatopoulos, and K. Aboudolas. Cost effective real-time traffic signal control using the TUC strategy. **IEEE Intelligent Transportation Systems Magazine**, vol. 2, no. 4, pp. 6–17, Winter 2010.
37. M. Diamandis, M. Papageorgiou, E. B. Kosmatopoulos and G. Chamilothoris, Identification and Adaptive Control for Systems with Nonlinear Input Delays: Application to Open Channel Water Flow Systems, **Computer-Aided Civil and Infrastructure Engineering**, vol. 26, pp. 464–480, 2011.
38. D. Kolokotsa, D. Rovas, E. Kosmatopoulos, K. Kalaitzakis, A roadmap towards intelligent net zero- and positive-energy buildings, **Solar Energy**, vol. 85, no. 12 , pp. 3067-3084, 2011.
39. A. Kouvelas, K. Aboudolas, M. Papageorgiou, and E.B. Kosmatopoulos, A Hybrid Strategy for Real-time Traffic Signal Control of Urban Road Networks, **IEEE Transactions on Intelligent Transportation Systems**, vol. 12, no. 3, pp. 884-894, 2011.
40. A. Kouvelas, K. Aboudolas, E.B. Kosmatopoulos and M. Papageorgiou, Adaptive Performance Optimization for Large-Scale Traffic Control Systems, **IEEE Transactions on Intelligent Transportation Systems**, vol. 12, no. 4 , pp. 1434-1445, 2011.
41. Simone Baldi, Petros A. Ioannou and Elias B. Kosmatopoulos, Adaptive Mixing Control with Multiple Estimators, **International Journal of Adaptive Control and Signal Processing**, 26 (8) , pp. 800-820, 2012.
42. Alessandro Renzaglia, Lefteris Doitsidis, Agostino Martinelli and Elias B. Kosmatopoulos, Multi-Robot 3D Coverage of Unknown Areas, **International Journal of Robotics Research**, 31 (6): 738-752 , 2012.

43. L. Doitsidis, S. Weiss, A., Renzaglia, M.W., Achtelik, E. Kosmatopoulos, R. Siegwart, D., Scaramuzza, D. Optimal surveillance coverage for teams of micro aerial vehicles in GPS-denied environments using onboard vision, ***Autonomous Robots***, 33 (1-2) , pp. 173-188, 2012.
44. Y.Wang, E. B. Kosmatopoulos, M. Papageorgiou, I. Papamichail. Local Ramp Metering in the Presence of a Distant Downstream Bottleneck: Theoretical Analysis and Simulation Study, ***IEEE Transactions on Intelligent Transportation Systems***, vol. 5, pp. 2024-2039, 2014.
45. A. Amanatiadis, S.A. Chatzichristofis, K. Charalampous, L. Doitsidis, E.B. Kosmatopoulos, Ph. Tsalides, A. Gasteratos, and S.I. Roumeliotis, A Multi-Objective Exploration Strategy for Mobile Robots under Operational Constraints, ***IEEE Access***, vol. 1, pp. 691-702, 2013.
46. D. Scaramuzza, M.C. Achtelik, L. Doitsidis, F. Fraundorfer, E.B. Kosmatopoulos, A. Martinelli, M.W. Achtelik, M. Chli, S.A. Chatzichristofis, L. Kneip, D. Gurdan, L. Heng, G.H. Lee, S. Lynen, L. Meier, M. Pollefeys, A. Renzaglia, Roland Siegwart, J.C. Stumpf, P. Tanskanen, C. Troiani, S. Weiss, Vision-Controlled Micro Flying Robots: from System Design to Autonomous Navigation and Mapping in GPS-denied Environments, ***IEEE Robotics and Automation Magazine***, vol. 21, no. 3, pp. 26-40, 2014.
47. S. Baldi, I. Michailidis, E. B. Kosmatopoulos, A. Papachristodoulou and P. A. Ioannou, Convex Design Control for Practical Nonlinear Systems, ***IEEE Transactions on Automatic Control***, vol. 59, no. 7, pp. 1692-1705, 2014.
48. S. Baldi, I. Michailidis, E. B. Kosmatopoulos and P. A. Ioannou, A 'Plug-n-Play' Computationally Efficient Approach for Control Design of Large-Scale Nonlinear Systems using Co-simulation, ***IEEE Control Systems Magazine***, vol. 34, no. 5, pp. 56-71, 2014.
49. Baldi S., Karagevrekis A., Michailidis I.T., Kosmatopoulos E.B. Joint energy demand and thermal comfort optimization in photovoltaic-equipped interconnected microgrids, ***Energy Conversion and Management***, vol. 101, pp. 352-363, 2015.
50. Korkas C.D., Baldi S., Michailidis I., Kosmatopoulos E.B., Intelligent energy and thermal comfort management in grid-connected microgrids with heterogeneous occupancy schedule, ***Applied Energy***, vol. 149, pp. 194-203, 2015.
51. Michailidis I.T., Baldi S., Pichler M.F., Kosmatopoulos E.B., Santiago J.R. Proactive control for solar energy exploitation: A german high-inertia building case study, ***Applied Energy***, vol. 155, pp. 409-420, 2015.
52. Baldi S., Michailidis I., Ravanis C., Kosmatopoulos E.B. Model-based and model-free "plug-and-play" building energy efficient control, ***Applied Energy***, vol. 154, pp. 829-841, 2015.
53. Manolis D., Papamichail I., Kosmatopoulos E.B., Papageorgiou M. Automated tuning of ITS management and control systems: Results from real-life experiments, ***Transportation Research Part C: Emerging Technologies***, accepted for publication 2015.
54. A. Ch. Kapoutsis, Savvas A. Chatzichristofis, Lefteris Doitsidis, J. Borges de Sousa, J. Pinto, J. Braga, E. B. Kosmatopoulos, Real-time adaptive multi-robot exploration with application to underwater map construction. ***Autonomous Robots***, 39 (4) 2015.
55. Korkas C.D., Baldi S., Michailidis I., Kosmatopoulos E.B., Occupancy-based Demand Response and Thermal Comfort Optimization in Microgrids with Renewable Energy Sources and Energy Storage. ***Applied Energy***, vol. 163, oo. 93-104, 2016.

Conference Publications

1. Baldi S., Valmorbida G., Papachristodoulou A., Kosmatopoulos E.B. Piecewise polynomial policy iterations for synthesis of optimal control laws in input-saturated systems 2015 ***Proceedings of the American Control Conference***
2. Baldi S., Michailidis I., Ntampasi V., Kosmatopoulos E.B., Papamichail I., Papageorgiou M. Simulation-based synthesis for approximately optimal urban traffic light management 2015 ***Proceedings of the American Control Conference***
3. Korkas C.D., Baldi S., Michailidis I., Kosmatopoulos E.B. Multi-objective control strategy for energy management of grid-connected heterogeneous microgrids 2015 ***Proceedings of the American Control Conference***
4. Kosmatopoulos E.B. CLF-based control design with good transient performance for known and unknown multi-input nonlinear systems 2015 2009 ***European Control Conference, ECC 2009***
5. Futterer J., Constantin A., Schmidt M., Streblow R., Muller D., Kosmatopoulos E. A multifunctional demonstration bench for advanced control research in buildings - Monitoring, control, and interface system 2013 ***IECON Proceedings (Industrial Electronics Conference)***
6. Renzaglia A., Doitsidis L., Chatzichristofis S.A., Martinelli A., Kosmatopoulos E.B. Distributed multi-robot coverage using micro aerial vehicles 2013 2013 ***21st Mediterranean Conference on Control and Automation, MED 2013 - Conference Proceedings***
7. Kapoutsis A.Ch., Chatzichristofis S.A., Doitsidis L., Borges De Sousa J., Kosmatopoulos E.B. Autonomous navigation of teams of unmanned aerial or underwater vehicles for exploration of unknown static & dynamic environments 2013 2013 ***21st Mediterranean Conference on Control and Automation, MED 2013 - Conference Proceedings***
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