

Publication list

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Books and book chapters

- [B3] A. V. Papadopoulos and M. Prandini. *Fondamenti di Automatica: Esercizi*. (In press, In Italian). Pearson Italia, 2016.
- [B2] M. Maggio, T. Abdelzaher, L. Esterle, H. Giese, J. O. Kephart, O. J. Mengshoel, A. V. Papadopoulos, A. Robertsson, and K. Wolter. “Self-Adaptation of Individual Entities”. In: *Self-Aware Computing Systems (SACS)*. (submitted under review). 2015.
- [B1] A. Leva, M. Maggio, A. V. Papadopoulos, and F. Terraneo. *Control-based operating system design*. Control Engineering Series. IET, 2013. DOI: 10.1049/PBCE089E.

International Journals

- [J12] A. V. Papadopoulos, L. Bascetta, and G. Ferretti. “Generation of Human Walking Paths”. In: *Autonomous Robots* 40.1 (2016), pp. 59–75. DOI: 10.1007/s10514-015-9443-2.
- [J11] A. Leva, F. Terraneo, L. Rinaldi, A. V. Papadopoulos, and M. Maggio. “High-Precision Low-Power Wireless Nodes’ Synchronization via Decentralized Control”. In: *IEEE Transactions on Control Systems Technology* (2015). (accepted), pp. 1–15. DOI: 10.1109/TCST.2015.2483559.
- [J10] A. V. Papadopoulos and A. Leva. “A model partitioning method based on dynamic decoupling for the efficient simulation of multibody systems”. In: *Multibody System Dynamics* 34.2 (2015), pp. 163–190. DOI: 10.1007/s11044-014-9415-x.
- [J9] A. V. Papadopoulos, M. Maggio, A. Leva, and E. Bini. “Hard Real-Time Guarantees in Feedback-based Resource Reservations”. In: *Real-Time Systems* 51.3 (2015), pp. 221–246. DOI: 10.1007/s11241-015-9224-1.
- [J8] A. V. Papadopoulos, M. Maggio, F. Terraneo, and A. Leva. “A Dynamic Modelling Framework for Control-based Computing System Design”. In: *Mathematical and Computer Modelling of Dynamical Systems* 21.3 (2015). (invited paper), pp. 251–271. DOI: 10.1080/13873954.2014.942785.
- [J7] A. V. Papadopoulos and A. Leva. “Automating efficiency-targeted approximations in modelling and simulation tools: dynamic decoupling and mixed-mode integration”. In: *SIMULATION: Transactions of The Society for Modeling and Simulation International* 90.10 (2014), pp. 1158–1176. DOI: 10.1177/0037549714547296.
- [J6] F. Dercole, M. De Carli, F. Della Rossa, and A. V. Papadopoulos. “Overpunishing is not necessary to fix cooperation in voluntary public goods games”. In: *Journal of Theoretical Biology* 326.0 (2013), pp. 70–81. DOI: 10.1016/j.jtbi.2012.11.034.
- [J5] A. Leva and A. V. Papadopoulos. “Tuning of event-based industrial controllers with simple stability guarantees”. In: *Journal of Process Control* 23.9 (2013), pp. 1251–1260. DOI: 10.1016/j.jprocont.2013.07.010.

- [J4] M. Maggio, A. V. Papadopoulos, and A. Leva. “On the Use of Feedback Control in the Design of Computing System Components”. In: *Asian Journal of Control* 15.1 (2013). (invited paper), pp. 31–40. DOI: 10.1002/asjc.509.
- [J3] M. Maggio, H. Hoffmann, A. V. Papadopoulos, J. Panerati, M. D. Santambrogio, A. Agarwal, and A. Leva. “Comparison of Decision Making Strategies for Self-Optimization in Autonomic Computing Systems”. In: *ACM Transactions on Autonomous and Adaptive Systems* 7.4 (2012), 36:1–36:32. DOI: 10.1145/2382570.2382572.
- [J2] A. V. Papadopoulos, M. Maggio, S. Negro, and A. Leva. “General control-theoretical framework for online resource allocation in computing systems”. In: *IET Control Theory & Applications* 6.11 (2012), pp. 1594–1602. DOI: 10.1049/iet-cta.2011.0632.
- [J1] A. Leva, S. Negro, and A. V. Papadopoulos. “PI/PID autotuning with contextual model parametrisation”. In: *Journal of Process Control* 20.4 (2010), pp. 452–463. DOI: 10.1016/j.jprocont.2010.01.005.

International Conferences

- [C30] K. Angelopoulos, A. V. Papadopoulos, and J. Mylopoulos. “Adaptive Predictive Control for Self-Adaptive Software Systems”. In: *Proceedings of the 1st International Workshop on Control Theory for Software Engineering (co-located with the 10th Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering)*. CTSE 2015. Bergamo, Italy: ACM, 2015, pp. 17–21. DOI: 10.1145/2804337.2804340.
- [C29] D. Desmeurs, C. Klein, A. V. Papadopoulos, and J. Tordsson. “Event-Driven Application Brownout: Reconciling High Utilization and Low Tail Response Times”. In: *2015 IEEE International Conference on Cloud and Autonomic Computing (ICCAC)*. Cambridge, MA, USA, 2015, pp. 1–12. DOI: 10.1109/ICCAC.2015.25.
- [C28] A. Filieri, M. Maggio, K. Angelopoulos, N. D’Ippolito, I. Gerostathopoulos, A. B. Hempel, H. Hoffmann, P. Jamshidi, E. Kalyvianaki, C. Klein, F. Krikava, S. Misailovic, A. V. Papadopoulos, S. Ray, A. M. Sharifloo, S. Shevtsov, M. Ujma, and T. Vogel. “Software Engineering Meets Control Theory”. In: *10th International Symposium on Software Engineering for Adaptive and Self-Managing Systems*. SEAMS 15. Florence, Italy, 2015, pp. 71–82. DOI: 10.1109/SEAMS.2015.12.
- [C27] A. Leva and A. V. Papadopoulos. “Disturbance rejection in autotuners: an assessment method and a rule proposal”. In: *American Control Conference (ACC)*. Chicago, IL, USA, 2015, pp. 2876–2881. DOI: 10.1109/ACC.2015.7171171.
- [C26] A. V. Papadopoulos. “Design and Performance Guarantees in Cloud Computing: Challenges and Opportunities”. In: *10th International Workshop on Feedback Computing*. Seattle, WA, USA, 2015.
- [C25] A. V. Papadopoulos, R. Carone, M. Maggio, and A. Leva. “A control-theoretical approach to thread scheduling for multicore processors”. In: *Control Applications (CCA), 2015 IEEE Conference on*. Sydney, Australia: IEEE, 2015, pp. 1103–1110. DOI: 10.1109/CCA.2015.7320760.
- [C24] A. V. Papadopoulos and M. Maggio. “Virtual Machine Migration in Cloud Infrastructures: Problem Formalization and Policies Proposal”. In: *Decision and Control (CDC), 2015 IEEE 54th Annual Conference on*. Osaka, Japan: IEEE, 2015, pp. 6698–6705.
- [C23] F. Terraneo, A. Leva, S. Seva, M. Maggio, and A. V. Papadopoulos. “Reverse Flooding: exploiting radio interference for efficient propagation delay compensation in WSN clock synchronization”. In: *Proceedings of the 36th IEEE Real-Time Systems Symposium*. RTSS. San Antonio, TX, USA, 2015, pp. 175–184. DOI: 10.1109/RTSS.2015.24.

- [C22] J. Dürango, M. Dellkrantz, M. Maggio, C. Klein, A. V. Papadopoulos, F. Hernández-Rodríguez, E. Elmroth, and K.-E. Årzén. “Control-theoretical load-balancing for cloud applications with brownout”. In: *Decision and Control (CDC), 2014 IEEE 53rd Annual Conference on*. Los Angeles, CA, USA: IEEE, 2014, pp. 5320–5327. DOI: 10.1109/CDC.2014.7040221.
- [C21] C. Klein, A. V. Papadopoulos, M. Dellkrantz, J. Dürango, M. Maggio, K.-E. Årzén, F. Hernández-Rodríguez, and E. Elmroth. “Improving Cloud Service Resilience using Brownout-Aware Load-Balancing”. In: *Reliable Distributed Systems (SRDS), 2014 IEEE 33rd International Symposium on*. Nara, Japan: IEEE, 2014, pp. 31–40. DOI: 10.1109/SRDS.2014.14.
- [C20] A. Leva, D. Mastrandrea, M. Bonvini, and A. V. Papadopoulos. “Object-Oriented Modelling and Simulation of Air Flow in Data Centres Based on a Quasi-3D Approach for Energy Optimisation”. In: *Utility and Cloud Computing (UCC), 2014 IEEE/ACM 7th International Conference on*. London, UK: IEEE, 2014, pp. 554–559. DOI: 10.1109/UCC.2014.85.
- [C19] A. V. Papadopoulos, L. Bascetta, and G. Ferretti. “A Comparative Evaluation of Human Motion Planning Policies”. In: *Proceedings of the 19th IFAC World Congress*. Vol. 19. Cape Town, South Africa: IFAC, 2014, pp. 12299–12304. DOI: 10.3182/20140824-6-ZA-1003.01898.
- [C18] A. V. Papadopoulos, F. Casella, and A. Leva. “Model separability indices for efficient dynamic simulation”. In: *Proceedings of the 19th IFAC World Congress*. Vol. 19. Cape Town, South Africa: IFAC, 2014, pp. 10796–10801. DOI: 10.3182/20140824-6-ZA-1003.01940.
- [C17] A. V. Papadopoulos and M. Prandini. “Model reduction of switched affine systems: a method based on balanced truncation and randomized optimization”. In: *Proceedings of the 17th International Conference on Hybrid Systems: Computation and Control*. HSCC ’14. Berlin, Germany: ACM, 2014, pp. 113–122. DOI: 10.1145/2562059.2562131.
- [C16] F. Terraneo, L. Rinaldi, M. Maggio, A. V. Papadopoulos, and A. Leva. “FLOPSYNC-2: efficient monotonic clock synchronisation”. In: *Proceedings of the 35th IEEE Real-Time Systems Symposium*. RTSS. Rome, Italy: IEEE, 2014, pp. 11–20. DOI: 10.1109/RTSS.2014.14.
- [C15] A. Leva and A. V. Papadopoulos. “Teaching a conscious use of PI/PID tuning rules”. In: *10th IFAC Symposium on Advances in Control Education (ACE)*. Vol. 10. Sheffield, UK: IFAC, 2013, pp. 25–30. DOI: 10.3182/20130828-3-UK-2039.00052.
- [C14] A. Leva, A. V. Papadopoulos, and M. Maggio. “A general control-theoretical methodology for runtime resource allocation in computing systems”. In: *Decision and Control (CDC), 2013 IEEE 52nd Annual Conference on*. Florence, Italy: IEEE, 2013, pp. 3487–3492. DOI: 10.1109/CDC.2013.6760418.
- [C13] A. V. Papadopoulos, J. Åkesson, F. Casella, and A. Leva. “Automatic Partitioning and Simulation of Weakly Coupled Systems”. In: *Decision and Control (CDC), 2013 IEEE 52nd Annual Conference on*. Florence, Italy: IEEE, 2013, pp. 3172–3177. DOI: 10.1109/CDC.2013.6760367.
- [C12] A. V. Papadopoulos, L. Bascetta, and G. Ferretti. “Generation of Human Walking Paths”. In: *Intelligent Robots and Systems (IROS), 2013 IEEE/RSJ International Conference on*. Tokyo, Japan: IEEE, 2013, pp. 1676–1681. DOI: 10.1109/IROS.2013.6696574.
- [C11] A. V. Papadopoulos and A. Leva. “Automating Dynamic Decoupling in Object-Oriented Modelling and Simulation Tools”. In: *5th International workshop on Equation-Based Object-Oriented Modeling Languages and Tools (EOOLT)*. Nottingham, UK, 2013, pp. 37–44.
- [C10] A. V. Papadopoulos and A. Leva. “Laboratories over the network: from remote to mobile”. In: *10th IFAC Symposium on Advances in Control Education (ACE)*. Vol. 10. Sheffield, UK: IFAC, 2013, pp. 84–89. DOI: 10.3182/20130828-3-UK-2039.00051.
- [C9] M. Maggio, A. V. Papadopoulos, and A. Leva. “SMART Computing Systems: Sensing, Modelling, Actuating, Regulating, and Tuning”. In: *Proceedings of the 7th International Workshop on Feedback Computing*. San Jose, CA, USA, 2012.

- [C8] M. Maggio, F. Terraneo, A. V. Papadopoulos, and A. Leva. “A PI-based control structure as an operating system scheduler”. In: *Proceedings IFAC Conference on Advances in PID Control*. Vol. 2. Brescia, Italy: IFAC, 2012, pp. 329–334. DOI: 10-3182/20120328-3-IT-3014.00056.
- [C7] A. V. Papadopoulos and A. Leva. “Antiwindup-aware PI autotuning”. In: *Proceedings IFAC Conference on Advances in PID Control*. Vol. 2. Brescia, Italy: IFAC, 2012, pp. 554–559. DOI: 10-3182/20120328-3-IT-3014.00094.
- [C6] A. V. Papadopoulos, M. Maggio, F. Casella, and J. Åkesson. “Function inlining in Modelica models”. In: *Proceedings of the 7th International Conference of Mathematical Modelling, MATHMOD’12*. Vol. 7. Vienna, Austria: IFAC, 2012, pp. 1091–1094. DOI: 10.3182/20120215-3-AT-3016.00193.
- [C5] A. V. Papadopoulos, M. Maggio, and A. Leva. “Control and design of computing systems: what to model and how”. In: *Proceedings of the 7th International Conference of Mathematical Modelling, MATHMOD’12*. Vol. 7. Vienna, Austria: IFAC, 2012, pp. 102–107. DOI: 10.3182/20120215-3-AT-3016.00018.
- [C4] P. Cremonesi, F. Garzotto, S. Negro, A. V. Papadopoulos, and R. Turrin. “Comparative evaluation of recommender system quality”. In: *CHI EA ’11: Proceedings of the 2011 annual conference extended abstracts on Human factors in computing systems*. Vancouver, BC, Canada: ACM, 2011, pp. 1927–1932. DOI: 10.1145/1979742.1979896.
- [C3] P. Cremonesi, F. Garzotto, S. Negro, A. V. Papadopoulos, and R. Turrin. “Looking for “Good” Recommendations: A Comparative Evaluation of Recommender Systems”. In: *INTERACT’11: Proceedings of the 13th IFIP TC 13 international conference on Human-computer interaction*. Ed. by P. Campos, N. Graham, J. Jorge, N. Nunes, P. Palanque, and M. Winckler. Vol. 6948. Lecture Notes in Computer Science. Lisbon, Portugal: Springer-Verlag, 2011, pp. 152–168. DOI: 10.1007/978-3-642-23765-2_11.
- [C2] A. V. Papadopoulos, M. Maggio, S. Negro, and A. Leva. “Enhancing feedback process scheduling via a predictive control approach”. In: *Proceedings of the 18th IFAC World Congress*. Vol. 18. Milan, Italy: IFAC, 2011, pp. 13522–13527. DOI: 10.3182/20110828-6-IT-1002.01156.
- [C1] A. Leva, S. Negro, and A. V. Papadopoulos. “PI(D) Tuning with Contextual Model Identification”. In: *Proceedings of the European Control Conference (ECC ’09)*. Budapest, Hungary, 2009, pp. 4013–4018.

Submitted to International Journals

- [SJ4] A. Filieri, M. Maggio, K. Angelopoulos, N. D’Ippolito, I. Gerostathopoulos, A. B. Hempel, H. Hoffmann, P. Jamshidi, E. Kalyvianaki, C. Klein, F. Krikava, S. Misailovic, A. V. Papadopoulos, S. Ray, A. M. Sharifloo, S. Shevtsov, M. Ujma, and T. Vogel. “Control Strategies for Self-Adaptive Software Systems”. In: *ACM Transactions on Autonomous and Adaptive Systems* (2015). (submitted under review).
- [SJ3] A. V. Papadopoulos, A. Ali-Eldin, K.-E. Årzén, J. Tordsson, and E. Elmroth. “PEAS: A Performance Evaluation Framework for Auto-Scaling Strategies in Cloud Applications”. In: *ACM Transactions on Modeling and Performance Evaluation of Computing Systems (TOMPECS)* (2015). (submitted under review).
- [SJ2] A. V. Papadopoulos, C. Klein, M. Maggio, J. Dürango, M. Dellkrantz, F. Hernández-Rodríguez, E. Elmroth, and K.-E. Årzén. “Control-Based Load-Balancing Techniques: Analysis and Performance Evaluation via a Randomized Optimization Approach”. In: *Control Engineering Practice* (2015). (submitted under review).
- [SJ1] A. V. Papadopoulos and M. Prandini. “Model reduction of switched affine systems”. In: *Automatica* (2015). (submitted under review).

Submitted to International Conferences

- [SC1] A. Ali-Eldin, A. Ilyushkin, B. Ghit, N. Herbst, A. V. Papadopoulos, and A. Iosup. “Benchmarking Auto-Scaling Algorithms”. In: *7th ACM/SPEC International Conference on Performance Engineering (Demos and Posters)*. ICPE. (submitted under review). 2016.