
References

- [1] Autosar: Automotive open system architecture. 2015.
- [2] T. F. Abdelzaher, J. A. Stankovic, C. Lu, R. Zhang, and Y. Lu. Feedback performance control in software services. *IEEE Control Systems*, 23(3): 74–90, June 2003.
- [3] A. Sharif Ahmadian, M. Hosseingholi, and A. Ejlali. Discrete feedback-based dynamic voltage scaling for safety critical real-time systems. *Scientia Iranica*, 20(3):647–656, 2013.
- [4] Mohammad Abdullah Al Faruque, Rudolf Krist, and Jörg Henkel. ADAM: run-time agent-based distributed application mapping for on-chip communication. In *Design Automation Conference*, 2008.
- [5] Karl-Erik Arzen, Anders Robertsson, Dan Henriksson, Mikael Johansson, Håkan Hjalmarsson, and Karl Henrik Johansson. Conclusions of the artist2 roadmap on control of computing systems. *SIGBED Rev.*, 3(3):11–20, July 2006.
- [6] Giuseppe Ascia, Vincenzo Catania, and Maurizio Palesi. A multi-objective genetic approach to mapping problem on network-on-chip. *Journal of Universal Computer Science*, 12(4):370–394, 2006.
- [7] K. Astrom and T. Hagglund. *PID Controllers: Theory, Design and Tuning*. EDS Publications Ltd., 2nd edition, 1995.
- [8] K. J. Astrom and T. Hagglund. Revisiting the Ziegler Nichols step response method for PID control. *Journal of Process Control*, 14(6): 635–650, 2004.
- [9] N. Audsley, A. Burns, M. Richardson, K. Tindell, and A. J. Wellings. Applying new scheduling theory to static priority pre-emptive scheduling. *Software Engineering Journal*, 8(5):284–292, Sept 1993.
- [10] R. Badia, F. Escala, E. Gabriel, J. Gimenez, R. Keller, J. Labarta, and M. Muller. Performance prediction in a grid environment. In *Grid Computing*, pp. 257–264, 2004.
- [11] S. Banachowski, T. Bisson, and S. A. Brandt. Integrating best-effort scheduling into a real-time system. In *Real-Time Systems Symposium, 2004. Proceedings. 25th IEEE International*, pp. 139–150, Dec 2004.
- [12] Anton Beloglazov and Rajkumar Buyya. Energy efficient allocation of virtual machines in cloud data centers. In *2010 10th IEEE/ACM*

- International Conference on Cluster, Cloud and Grid Computing (CCGrid)*, pp. 577–578, May 2010.
- [13] Anton Beloglazov and Rajkumar Buyya. Optimal Online Deterministic Algorithms and Adaptive Heuristics for Energy and Performance Efficient Dynamic Consolidation of Virtual Machines in Cloud Data Centers. *Concurr. Comput.: Pract. Exper.*, 24(13):1397–1420, 2012.
- [14] G. Beltrame, L. Fossati, and D. Sciuto. Decision-theoretic design space exploration of multiprocessor platforms. *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, 29(7): 1083–1095, July 2010.
- [15] Luca Benini, Davide Bertozzi, and Michela Milano. Resource management policy handling multiple use-cases in mpsoc platforms using constraint programming. In *Proceedings of the 24th International Conference on Logic Programming, ICLP’08*, pp. 470–484, Berlin, Heidelberg, 2008. Springer-Verlag.
- [16] Guillem Bernat, Antoine Colin, and Stefan M. Petters. Wcet analysis of probabilistic hard real-time systems. In *Proceedings of the 23rd IEEE Real-Time Systems Symposium, RTSS’02*, p. 279–, Washington, DC, USA, 2002. IEEE Computer Society.
- [17] N. Bobroff, A. Kochut, and K. Beaty. Dynamic placement of virtual machines for managing SLA violations. In *10th IFIP/IEEE International Symposium on Integrated Network Management, 2007. IM’07*, pp. 119–128, 2007.
- [18] S. H. Bokhari. On the mapping problem. *IEEE Trans. Comput.*, 30(3):207–214, 1981.
- [19] Evgeny Bolotin, Israel Cidon, Ran Ginosar, and Avinoam Kolodny. QNoC: QoS architecture and design process for network on chip. *Journal of Sys. Arch.*, 50:105–128, 2004.
- [20] E. W. Briao, D. Barcelos, F. Wronski, and F. R. Wagner. Impact of task migration in NoC-based mpsocs for soft real-time applications. In *2007 IFIP International Conference on Very Large Scale Integration*, pp. 296–299, Oct 2007.
- [21] Uwe Brinkschulte, Mathias Pacher, and Alexander Von Renteln. Towards an artificial hormone system for self-organizing real-time task allocation. In *Software Technologies for Embedded and Ubiquitous Sys.*, pp. 339–347. Springer, 2007.
- [22] Andrew Burkimsher, Iain Bate, and Leandro Soares Indrusiak. A survey of scheduling metrics and an improved ordering policy for list schedulers operating on workloads with dependencies and a wide variation in execution times. *Future Gener. Comput. Syst.*, 29(8):2009–2025, October 2013.

- [23] Andrew Burkimsher, Iain Bate, and Leandro Soares Indrusiak. A characterisation of the workload on an engineering design grid. In *Proceedings of the High Performance Computing Symposium, HPC'14*, pp. 8:1–8: 8, San Diego, CA, USA, 2014. Society for Computer Simulation International.
- [24] Andrew Marc Burkimsher. *Fair, Responsive Scheduling of Engineering Workflows on Computing Grids*. PhD thesis, UK, 2014.
- [25] A. Burns, D. Prasad, A. Bondavalli, F. Di Giandomenico, K. Ramamritham, J. Stankovic, and L. Strigini. The Meaning and Role of Value in Scheduling Flexible Real-time Systems. *J. Syst. Archit.*, 46(4):305–325, 2000.
- [26] Giorgio Buttazzo and Luca Abeni. Adaptive workload management through elastic scheduling. *Real-Time Systems*, 23(1):7–24, 2002.
- [27] Rajkumar Buyya and Manzur Murshed. A deadline and budget constrained cost-time optimisation algorithm for scheduling task farming applications on global grids. *arXiv:cs/0203020*, March 2002. Technical Report, Monash University, March 2002.
- [28] Rodrigo N. Calheiros and Rajkumar Buyya. Energy-Efficient Scheduling of Urgent Bag-of-Tasks Applications in Clouds Through DVFS. In *Proceedings of IEEE International Conference on Cloud Computing Technology and Science (CLOUDCOM)*, pp. 342–349, 2014.
- [29] I. Caliskanelli and L. S. Indrusiak. Search-Based Parameter Tuning on Application-Level Load Balancing for Distributed Embedded Systems. In *IEEE Int. Conf. on High Perf. Comp. and Comms. on Embedded and Ubiquitous Computing (HPCC_EUC)*, 2013.
- [30] Ipek Caliskanelli, Leandro Soares Indrusiak, Fiona Polack, James Harbin, Paul Mitchell, and David Chesmore. Bio-inspired load balancing in large-scale WSNs using pheromone signalling. *Int. Journal of Distributed Sensor Networks*, 2013.
- [31] Salvatore Carta, Andrea Alimonda, Alessandro Pisano, Andrea Acquaviva, and Luca Benini. A control theoretic approach to energy-efficient pipelined computation in mpsocs. *ACM Trans. Embed. Comput. Syst.*, 6(4), September 2007.
- [32] E. Carvalho, C. Marcon, N. Calazans, and F. Moraes. Evaluation of static and dynamic task mapping algorithms in NoC-based mpsocs. pp. 087–090, Oct. 2009.
- [33] G. Castilhos, M. Mandelli, G. Madalozzo, and F. Moraes. Distributed resource management in NoC-based MPSoCs with dynamic cluster sizes. In *IEEE Computer Society Annual Symp. on VLSI*, 2013.
- [34] Ken Chen and Paul Muhlethaler. A Scheduling Algorithm for Tasks Described by Time Value Function. *Real-Time Syst.*, 10(3):293–312, 1996.

- [35] Razvan Cheveresan, Matt Ramsay, Chris Feucht, and Ilya Sharapov. Characteristics of workloads used in high performance and technical computing. In *Proceedings of the 21st Annual International Conference on Supercomputing*, ICS'07, pp. 73–82, New York, NY, USA, 2007. ACM.
- [36] C.-L. Chou and R. Marculescu. Run-time task allocation considering user behavior in embedded multiprocessor networks-on-chip. *Computer-Aided Design of Integrated Circuits and Systems, IEEE Transactions on*, 29(1):78–91, Jan. 2010.
- [37] Chen-Ling Chou and R. Marculescu. Incremental run-time application mapping for homogeneous NoCs with multiple voltage levels. pp. 161–166, 30 2007-Oct. 3 2007.
- [38] Chen-Ling Chou and R. Marculescu. User-aware dynamic task allocation in networks-on-chip. pp. 1232–1237, March 2008.
- [39] Anup Das, Akash Kumar, and Bharadwaj Veeravalli. Energy-Aware Communication and Remapping of Tasks for Reliable Multimedia Multiprocessor Systems. In *ICPADS*, 2012.
- [40] R. I. Davis and A. Burns. Hierarchical fixed priority pre-emptive scheduling. In *26th IEEE International Real-Time Systems Symposium (RTSS'05)*, pp. 10 pp.–398, Dec 2005.
- [41] Robert I. Davis and Alan Burns. A survey of hard real-time scheduling for multiprocessor systems. *ACM Comput. Surv.*, 43(4):35:1–35:44, October 2011.
- [42] Robert I. Davis and Alan Burns. A survey of hard real-time scheduling for multiprocessor systems. *ACM Comput. Surv.*, 43(4):35:1–35:44, October 2011.
- [43] E. L. de Souza Carvalho, N. L. V. Calazans, and F. G. Moraes. Dynamic task mapping for MPSoCs. *IEEE Design Test of Computers*, 27:26–35, 2010.
- [44] Yixin Diao, N. Gandhi, J. L. Hellerstein, S. Parekh, and D. M. Tilbury. Using mimo feedback control to enforce policies for interrelated metrics with application to the apache web server. In *Network Operations and Management Symposium, 2002. NOMS 2002. 2002 IEEE/IFIP*, pp. 219–234, 2002.
- [45] S. Djosic and M. Jevtic. Dynamic voltage scaling for real-time systems under fault tolerance constraints. In *Microelectronics (MIEL), 2012 28th International Conference on*, pp. 375–378, May 2012.
- [46] Florin Dobrian, Vyas Sekar, Asad Awan, Ion Stoica, Dilip Joseph, Aditya Ganjam, Jibin Zhan, and Hui Zhang. Understanding the Impact of Video Quality on User Engagement. In *SIGCOMM Conf.*, SIGCOMM'11. ACM, 2011.

- [47] J. Eker, J. W. Janneck, E. A. Lee, Jie Liu, Xiaojun Liu, J. Ludvig, S. Neuendorffer, S. Sachs, and Yuhong Xiong. Taming heterogeneity – the Ptolemy approach. *Proceedings of the IEEE*, 91(1):127–144, 2003.
- [48] Jakob Engblom, Andreas Ermedahl, Mikael Sjödin, Jan Gustafsson, and Hans Hansson. Worst-case execution-time analysis for embedded real-time systems. *International Journal on Software Tools for Technology Transfer*, 4(4):437–455, 2003.
- [49] Stijn Eyerman and Lieven Eeckhout. Fine-grained DVFS Using On-chip Regulators. *ACM Trans. Archit. Code Optim.*, 8(1):1:1–1:24, 2011.
- [50] Hamid Mohammadi Fard, Radu Prodan, Juan Jose Durillo Barrionuevo, and Thomas Fahringer. A multi-objective approach for workflow scheduling in heterogeneous environments. In *IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGRID)*, pp. 300–309, 2012.
- [51] Dror Feitelson. *Workload Modeling for Computer Systems Performance Evaluation*. 2013.
- [52] J. D. Gelas. Dynamic power management: A quantitative approach. <http://www.anandtech.com/show/2919>, 2010. Accessed: 2016-06-05.
- [53] H. A. Ghazzawi, I. Bate, and L. S. Indrusiak. A control theoretic approach for workflow management. In *Engineering of Complex Computer Systems (ICECCS), 2012 17th International Conference on*, pp. 280–289, July 2012.
- [54] H. A. Ghazzawi, I. Bate, and L. S. Indrusiak. A control theoretic approach for workflow management. In *2012 17th International Conference on Engineering of Complex Computer Systems (ICECCS)*, pp. 280–289, July 2012.
- [55] Stefan Valentin Gheorghita, Martin Palkovic, Juan Hamers, Arnout Vandecappelle, Stelios Mamagkakis, Twan Basten, Lieven Eeckhout, Henk Corporaal, Francky Catthoor, Frederik Vandeputte, and Koen De Bosschere. System-scenario-based design of dynamic embedded systems. *ACM Trans. Des. Autom. Electron. Syst.*, 14(1):3:1–3:45, January 2009.
- [56] Georgia Giannopoulou, Nikolay Stoimenov, Pengcheng Huang, and Lothar Thiele. Scheduling of mixed-criticality applications on resource-sharing multicore systems. In *Proceedings of the Eleventh ACM International Conference on Embedded Software, EMSOFT’13*, pp. 17:1–17:15, Piscataway, NJ, USA, 2013. IEEE Press.
- [57] J. L. Hellerstein, Y. Diao, S. Parekh, and D. M. Tilbury. *Feedback Control of Computing Systems*. Wiley-IEEE Press, 2004.
- [58] Philip K. F. Hölzenspies, Johann L. Hurink, Jan Kuper, and Gerard J. M. Smit. Run-time spatial mapping of streaming applications to a

- heterogeneous multi-processor system-on-chip (mpsoc). pp. 212–217, 2008.
- [59] S. Hong, T. Chantem, and X. S. Hu. Meeting end-to-end deadlines through distributed local deadline assignments. In *Real-Time Systems Symposium (RTSS), 2011 IEEE 32nd*, pp. 183–192, Nov 2011.
- [60] Jingcao Hu and R. Marculescu. Energy-aware mapping for tile-based NoC architectures under performance constraints. pp. 233–239, jan. 2003.
- [61] Leandro Soares Indrusiak. End-to-end schedulability tests for multi-processor embedded systems based on networks-on-chip with priority-preemptive arbitration. *Journal of Systems Architecture*, 60(7): 553–561, 2014.
- [62] David E. Irwin, Laura E. Grit, and Jeffrey S. Chase. Balancing Risk and Reward in a Market-Based Task Service. In *IEEE International Symposium on High Performance Distributed Computing (HPDC)*, pp. 160–169, 2004.
- [63] D. Isovich, G. Fohler, and L. Steffens. Timing constraints of MPEG-2 decoding for high quality video: misconceptions and realistic assumptions. In *Euromicro Conference on Real-Time Sys.*, 2003.
- [64] P. Janert. *Feedback Control for Computer Systems*. O’Reilly Media, 2013.
- [65] B. Kao and H. Garcia-Molina. Deadline assignment in a distributed soft real-time system. *IEEE Trans. on Parallel and Distributed Sys.*, 8:1268–1274, 1997.
- [66] Bhavesh Khemka, Ryan Friese, Sudeep Pasricha, Anthony A Maciejewski, Howard Jay Siegel, Gregory A Koenig, Sarah Powers, Marcia Hilton, Rajendra Rambharos, and Steve Poole. Utility maximizing dynamic resource management in an oversubscribed energy-constrained heterogeneous computing system. *Sustainable Computing: Informatics and Systems*, 5:14–30, 2015.
- [67] Abbas Eslami Kiasari, Axel Jantsch, and Zhonghai Lu. Mathematical formalisms for performance evaluation of networks-on-chip. *ACM Comput. Surv.*, 45(3):38:1–38:41, July 2013.
- [68] Wonyoung Kim, M. S. Gupta, G. Y. Wei, and D. Brooks. System level analysis of fast, per-core dvfs using on-chip switching regulators. In *2008 IEEE 14th International Symposium on High Performance Computer Architecture*, pp. 123–134, Feb 2008.
- [69] Sebastian Kobbe, Lars Bauer, Daniel Lohmann, Wolfgang Schröder-Preikschat, and Jörg Henkel. DistRM: distributed resource management for on-chip many-core systems. In *Int. Conf. on Hardware/software codesign and sys. synthesis (CODES+ISSS)*, 2011.

- [70] Jonathan Koomey. Growth in data center electricity use 2005 to 2010. *A report by Analytical Press, completed at the request of The New York Times*, 2011.
- [71] H. Kopetz. The time-triggered model of computation. In *The 19th IEEE Real-Time Systems Symposium, 1998. Proceedings*, pp. 168–177, December 1998.
- [72] A. Kumar, B. Mesman, B. Theelen, H. Corporaal, and H. Yajun. Resource manager for non-preemptive heterogeneous multiprocessor system-on-chip. In *Proceedings of the 2006 IEEE/ACM/IFIP Workshop on Embedded Systems for Real Time Multimedia, ESTMED'06*, pp. 33–38, Washington, DC, USA, 2006. IEEE Computer Society.
- [73] Yu-Kwong Kwok, Anthony A. Maciejewski, Howard Jay Siegel, Ishfaq Ahmad, and Arif Ghafoor. A semi-static approach to mapping dynamic iterative tasks onto heterogeneous computing systems. *J. Parallel Distrib. Comput.*, 66(1):77–98, January 2006.
- [74] C. Lee, S. Kim, and S. Ha. Efficient run-time resource management of a manycore accelerator for stream-based applications. In *The 11th IEEE Symposium on Embedded Systems for Real-time Multimedia*, pp. 51–60, Oct 2013.
- [75] Yann-Hang Lee, Daeyoung Kim, M. Younis, J. Zhou, and J. McElroy. Resource scheduling in dependable integrated modular avionics. In *Dependable Systems and Networks, 2000. DSN 2000. Proceedings International Conference on*, pp. 14–23, 2000.
- [76] C. Li and L. Li. Multi-level scheduling for global optimization in grid computing. *Computers & Electrical Engineering*, 34(3):202–221, 2008.
- [77] Bin Lin, Arindam Mallik, Peter A. Dinda, Gokhan Memik, and Robert P. Dick. Power reduction through measurement and modeling of users and cpus: Summary. *SIGMETRICS Perform. Eval. Rev.*, 35(1): 363–364, June 2007.
- [78] J. W. S. Liu. *Real-Time Systems*. Prentice-Hall, 2000.
- [79] Carey Douglass Locke. *Best-effort Decision-making for Real-time Scheduling*. PhD thesis, Pittsburgh, PA, USA, 1986. AAI8702895.
- [80] C. Lu, J. A. Stankovic, G. Tao, and S. H. Son. Design and evaluation of a feedback control edf scheduling algorithm. In *Real-Time Systems Symposium, 1999. Proceedings. The 20th IEEE*, pp. 56–67, 1999.
- [81] Chenyang Lu, John A. Stankovic, Tarek F. Abdelzaher, Gang Tao, Sang H. Son, and Michael Marley. Performance specifications and metrics for adaptive real-time systems. In *Proceedings of the 21st IEEE Conference on Real-time Systems Symposium, RTSS'10*, pp. 13–23, Washington, DC, USA, 2000. IEEE Computer Society.

- [82] Chenyang Lu, John A. Stankovic, Sang H. Son, and Gang Tao. Feedback control real-time scheduling: Framework, modeling, and algorithms*. *Real-Time Syst.*, 23(1/2):85–126, July 2002.
- [83] Chenyang Lu, Xiaorui Wang, and X. Koutsoukos. Feedback utilization control in distributed real-time systems with end-to-end tasks. *Parallel and Distributed Systems, IEEE Transactions on*, 16(6):550–561, June 2005.
- [84] Chenyang Lu, Xiaorui Wang, and X. Koutsoukos. Feedback utilization control in distributed real-time systems with end-to-end tasks. *IEEE Transactions on Parallel and Distributed Systems*, 16(6):550–561, June 2005.
- [85] Shih-Shen Lu, Chun-Hsien Lu, and Pao-Ann Hsiung. Congestion- and energy-aware run-time mapping for tile-based network-on-chip architecture. pp. 300–305, Aug. 2010.
- [86] Bertram Ludscher, Ilkay Altintas, Chad Berkley, Dan Higgins, Efrat Jaeger, Matthew Jones, Edward A. Lee, Jing Tao, and Yang Zhao. Scientific workflow management and the kepler system. *Concurrency and Computation: Practice and Experience*, 18(10):1039–1065, 2006.
- [87] M. Mandelli, L. Ost, E. Carara, G. Guindani, T. Gouvea, G. Medeiros, and F. G. Moraes. Energy-aware dynamic task mapping for NoC-based MPSoCs. In *2011 IEEE International Symposium on Circuits and Systems (ISCAS)*, pp. 1676–1679, May 2011.
- [88] C. A. M. Marcon, E. I. Moreno, N. L. V. Calazans, and F. G. Moraes. Comparison of network-on-chip mapping algorithms targeting low energy consumption. *Computers Digital Techniques, IET*, 2(6):471–482, November 2008.
- [89] G. Mariani, P. Avasare, G. Vanmeerbeeck, C. Ykman-Couvreur, G. Palermo, C. Silvano, and V. Zaccaria. An industrial design space exploration framework for supporting run-time resource management on multi-core systems. In *2010 Design, Automation Test in Europe Conference Exhibition (DATE 2010)*, pp. 196–201, March 2010.
- [90] Andrew Stephen McGough, Ali Afzal, John Darlington, Nathalie Furmento, Anthony Mayer, and Laurie Young. Making the grid predictable through reservations and performance modelling. *Comput. J.*, 48(3):358–368, May 2005.
- [91] H. R. Mendis, L. S. Indrusiak, and N. C. Audsley. Bio-inspired distributed task remapping for multiple video stream decoding on homogeneous NoCs. In *2015 13th IEEE Symposium on Embedded Systems For Real-time Multimedia (ESTIMedia)*, pp. 1–10, October 2015.
- [92] Hashan R. Mendis, Leandro Soares Indrusiak, and Neil C. Audsley. Predictability and utilisation trade-off in the dynamic management

- of multiple video stream decoding on network-on-chip based homogeneous embedded multi-cores. In *Proc. of the 22nd Int. Conf. on Real-Time Networks and Sys.*, 2014.
- [93] Dejan S. Miložičić, Fred Douglass, Yves Paindaveine, Richard Wheeler, and Songnian Zhou. Process migration. *ACM Comput. Surv.*, 32(3): 241–299, September 2000.
- [94] A. Monot, N. Navet, B. Bavoux, and F. Simonot-Lion. Multisource software on multicore automotive ecus - combining runnable sequencing with task scheduling. *IEEE Transactions on Industrial Electronics*, 59(10):3934–3942, Oct 2012.
- [95] O. Moreira, J. D. Mol, M. Bekooij, and J. van Meerbergen. Multiprocessor resource allocation for hard-real-time streaming with a dynamic job-mix. In *11th IEEE Real Time and Embedded Technology and Applications Symposium*, pp. 332–341, March 2005.
- [96] Orlando Moreira, Frederico Valente, and Marco Bekooij. Scheduling multiple independent hard-real-time jobs on a heterogeneous multiprocessor. In *Proceedings of the 7th ACM & IEEE International Conference on Embedded Software*, EMSOFT’07, pp. 57–66, New York, NY, USA, 2007. ACM.
- [97] Pierre-André Mudry and Gianluca Tempesti. Self-scaling stream processing: A bio-inspired approach to resource allocation through dynamic task replication. In *Adaptive Hardware and Systems, NASA/ESA Conference on*. IEEE, 2009.
- [98] P. Munk, B. Saballus, J. Richling, and H. U. Heiss. Position paper: Real-time task migration on many-core processors. In *Architecture of Computing Systems. Proceedings, ARCS 2015 – The 28th International Conference on*, pp. 1–4, March 2015.
- [99] M. Di Natale and A. L. Sangiovanni-Vincentelli. Moving from federated to integrated architectures in automotive: The role of standards, methods and tools. *Proceedings of the IEEE*, 98(4):603–620, April 2010.
- [100] Borislav Nikolić, Hazem Ismail Ali, Stefan M. Petters, and Lufs Miguel Pinho. Are virtual channels the bottleneck of priority-aware wormhole-switched NoC-based many-cores? In *Proceedings of the 21st International Conference on Real-Time Networks and Systems*, RTNS ’13, pp. 13–22, New York, NY, USA, 2013. ACM.
- [101] A.-C. Orgerie, L. Lefevre, and J.-P. Gelas. Chasing gaps between bursts: Towards energy efficient large scale experimental grids. In *Ninth International Conference on Parallel and Distributed Computing, Applications and Technologies, 2008. PDCAT 2008*, pp. 381–389, December 2008.
- [102] V. Pallipadi and A. Starikovskiy. The ondemand governor: Past, present, and future. *Linux Symposium*, 2:223–238, 2006.

- [103] S. Pandey, L. Wu, S. M. Guru, and R. Buyya. A particle swarm optimization-based heuristic for scheduling workflow applications in cloud computing environments. In *2010 24th IEEE International Conference on Advanced Information Networking and Applications*, pp. 400–407, April 2010.
- [104] J. Park, J. Harnisch, M. Deubzer, and K. Jeong et al. Mode-dynamic task allocation and scheduling for an engine management real-time system using a multicore microcontroller. *SAE Int. J. Passeng. Cars – Electron. Electr. Syst.*, 7(1):133–140, 2014.
- [105] Ilia Pietri, Maciej Malawski, Gideon Juve, Ewa Deelman, Jarek Nabrzyski, and Rizos Sakellariou. Energy-constrained provisioning for scientific workflow ensembles. In *IEEE International Conference on Cloud and Green Computing (CGC)*, pp. 34–41, 2013.
- [106] Padmanabhan Pillai and Kang G. Shin. Real-time dynamic voltage scaling for low-power embedded operating systems. *SIGOPS Oper. Syst. Rev.*, 35(5):89–102, October 2001.
- [107] R. Piscitelli and A. D. Pimentel. Design space pruning through hybrid analysis in system-level design space exploration. In *2012 Design, Automation Test in Europe Conference Exhibition (DATE)*, pp. 781–786, March 2012.
- [108] R. C. Prim. Shortest connection networks and some generalizations. *Bell System Technical Journal*, 36(6):1389–1401, 1957.
- [109] Wei Quan and Andy D. Pimentel. Exploring task mappings on heterogeneous mpsoCs using a bias-elitist genetic algorithm. *CoRR*, abs/1406.7539, 2014.
- [110] A. Racu and L. S. Indrusiak. Using genetic algorithms to map hard real-time NoC-based systems. In *7th International Workshop on Reconfigurable Communication-centric Systems-on-Chip (ReCoSoC)*, 2012.
- [111] Alejandro Rico, Felipe Cabarcas, Carlos Villavieja, Milan Pavlovic, Augusto Vega, Yoav Etsion, Alex Ramirez, and Mateo Valero. On the simulation of large-scale architectures using multiple application abstraction levels. *ACM Trans. Archit. Code Optim.*, 8(4):36:1–36:20, January 2012.
- [112] I. Rodero, J. Jaramillo, A. Quiroz, M. Parashar, F. Guim, and S. Poole. Energy-efficient application-aware online provisioning for virtualized clouds and data centers. In *International Green Computing Conference (IGCC)*, pp. 31–45, 2010.
- [113] D. Rosu, K. Schwan, S. Yalamanchili, and R. Jha. On adaptive resource allocation for complex real-time applications. In *The 18th IEEE Real-Time Systems Symposium, 1997. Proceedings*, pp. 320–329, December 1997.

- [114] Xiaojun Ruan, Xiao Qin, Ziliang Zong, K. Bellam, and M. Nijim. An Energy-Efficient Scheduling Algorithm Using Dynamic Voltage Scaling for Parallel Applications on Clusters. In *Proceedings of International Conference on Computer Communications and Networks (ICCCN)*, pp. 735–740, 2007.
- [115] P. K. Saraswat, P. Pop, and J. Madsen. Task mapping and bandwidth reservation for mixed hard/soft fault-tolerant embedded systems. In *2010 16th IEEE Real-Time and Embedded Technology and Applications Symposium*, pp. 89–98, April 2010.
- [116] M. N. S. M. Sayuti and L. S. Indrusiak. Real-time low-power task mapping in networks-on-chip. In *2013 IEEE Computer Society Annual Symposium on VLSI (ISVLSI)*, pp. 14–19, Aug 2013.
- [117] M. N. S. M. Sayuti and L. S. Indrusiak. Real-time low-power task mapping in Networks-on-Chip. In *Proceedings of IEEE Computer Society Annual Symposium on VLSI (ISVLSI)*, pp. 14–19, 2013.
- [118] Lars Schor, Iuliana Bacivarov, Devendra Rai, Hoeseok Yang, Shin-Haeng Kang, and Lothar Thiele. Scenario-based design flow for mapping streaming applications onto on-chip many-core systems. In *Proceedings of the 2012 International Conference on Compilers, Architectures and Synthesis for Embedded Systems, CASES'12*, pp. 71–80, New York, NY, USA, 2012. ACM.
- [119] A. Schranzhofer, J. J. Chen, and L. Thiele. Dynamic power-aware mapping of applications onto heterogeneous mpsoc platforms. *IEEE Transactions on Industrial Informatics*, 6(4):692–707, Nov 2010.
- [120] A. Schranzhofer, Jian-Jian Chen, and L. Thiele. Dynamic power-aware mapping of applications onto heterogeneous mpsoc platforms. *Industrial Informatics, IEEE Transactions on*, 6(4):692–707, Nov. 2010.
- [121] Lui Sha, Tarek Abdelzaher, Karl-Erik Arzen, Anton Cervin, Theodore Baker, Alan Burns, Giorgio Buttazzo, Marco Caccamo, John Lehoczky, and Aloysius K. Mok. Real time scheduling theory: A historical perspective. *Real-Time Syst.*, 28(2–3):101–155, November 2004.
- [122] Z. Shi and A. Burns. Real-time communication analysis for on-chip networks with wormhole switching. In *Networks-on-Chip, 2008. NoCS 2008. Second ACM/IEEE International Symposium on*, pp. 161–170, April 2008.
- [123] A. K. Singh, M. Shafique, A. Kumar, and J. Henkel. Mapping on multi/multi-core systems: Survey of current and emerging trends. In *Design Automation Conference (DAC), 2013 50th ACM/EDAC/IEEE*, pp. 1–10, May 2013.

- [124] Amit Kumar Singh, Anup Das, and Akash Kumar. Energy Optimization by Exploiting Execution Slacks in Streaming Applications on Multiprocessor Systems. In *Proceedings of ACM Design Automation Conference (DAC)*, pp. 115:1–115:7, 2013.
- [125] Amit Kumar Singh, Piotr Dziurzanski, and Leandro Soares Indrusiak. Market-inspired Dynamic Resource Allocation in Many-core High Performance Computing Systems. In *IEEE International Conference on High Performance Computing & Simulation (HPCS)*, pp. 413–420, 2015.
- [126] Amit Kumar Singh, Muhammad Shafique, Akash Kumar, and Jörg Henkel. Mapping on Multi/Many-core Systems: Survey of Current and Emerging Trends. In *Proceedings of ACM Design Automation Conference (DAC)*, pp. 1:1–1:10, 2013.
- [127] Amit Kumar Singh, Muhammad Shafique, Akash Kumar, Jörg Henkel, Anup Das, Wu Jigang, Thambipillai Srikanthan, Samarth Kaushik, Yajun Ha, and Alok Prakash. Mapping on multi/many-core systems: survey of current and emerging trends. In *Design Automation Conference*, 2013.
- [128] Amit Kumar Singh, Thambipillai Srikanthan, Akash Kumar, and Wu Jigang. Communication-aware heuristics for run-time task mapping on NoC-based mp soc platforms. *J. Syst. Archit.*, 56(7):242–255, July 2010.
- [129] L. T. Smit, J. L. Hurink, and G. J. M. Smit. Run-time mapping of applications to a heterogeneous soc. pp. 78–81, Nov. 2005.
- [130] O. O. Sonmez and A. GURSOY. A novel economic-based scheduling heuristic for computational grids. *International Journal of High Performance Computing Applications*, 21(1):21–29, 2007.
- [131] Ranjani Sridharan and Rabi Mahapatra. Reliability aware power management for dual-processor real-time embedded systems. In *Proceedings of the 47th Design Automation Conference, DAC'10*, pp. 819–824, New York, NY, USA, 2010. ACM.
- [132] Shekhar Srikantaiah, Aman Kansal, and Feng Zhao. Energy aware consolidation for cloud computing. In *Proceedings of Conference on Power Aware Computing and Systems (HotPower)*, pp. 10–10, 2008.
- [133] Sundararajan Sriram and Shuvra S. Bhattacharyya. *Embedded Multi-processors: Scheduling and Synchronization*. CRC Press, 2009.
- [134] Sundararajan Sriram and Shuvra S. Bhattacharyya. *Embedded Multi-processors: Scheduling and Synchronization*. CRC Press, 2009.
- [135] J. A. Stankovic, Chenyang Lu, S. H. Son, and Gang Tao. The case for feedback control real-time scheduling. In *Real-Time Systems, 1999. Proceedings of the 11th Euromicro Conference on*, pp. 11–20, 1999.

- [136] S. Stuijk, T. Basten, M.C.W. Geilen, and H. Corporaal. Multiprocessor resource allocation for throughput-constrained synchronous dataflow graphs. In *44th ACM/IEEE Design Automation Conference, 2007. DAC'07*, pp. 777–782, June 2007.
- [137] S. Stuijk, M. Geilen, B. Theelen, and T. Basten. Scenario-aware dataflow: Modeling, analysis and implementation of dynamic applications. In *Embedded Computer Systems (SAMOS), 2011 International Conference on*, pp. 404–411, July 2011.
- [138] Y. Takeuchi, Y. Nakata, H. Kawaguchi, and M. Yoshimoto. Scalable parallel processing for H.264 encoding application to multi/many-core processor. In *Int. Conf. on Intelligent Control and Information Processing (ICICIP)*, August 2010.
- [139] Y. Tao and X. Yu. Classified optimization scheduling algorithm driven by multi-qos attributes in economical grid. In *International Conference on Computer Science and Software Engineering*, volume 3, pp. 70–73. IEEE, 2008.
- [140] M. K. Tavana, M. Salehi, and A. Ejlali. Feedback-based energy management in a standby-sparing scheme for hard real-time systems. In *Real-Time Systems Symposium (RTSS), 2011 IEEE 32nd*, pp. 349–356, Nov 2011.
- [141] Theocharis Theocharides, Maria K. Michael, Marios Polycarpou, and Ajit Dingankar. Hardware-enabled Dynamic Resource Allocation for Manycore Systems Using Bidding-based System Feedback. *EURASIP J. Embedded Syst.*, 2010:3:1–3:21, 2010.
- [142] Y. Tian, C. Lin, Z. Chen, J. Wan, and X. Peng. Performance evaluation and dynamic optimization of speed scaling on web servers in cloud computing. *Tsinghua Science and Technology*, pp. 298–307, 2013.
- [143] Ken Tindell. Adding time-offsets to schedulability analysis. Technical Report YCS 221, Dept. of Computer Science, University of York, January 1994.
- [144] Haluk Topcuoglu, Salim Hariri, and Min-you Wu. Performance-effective and low-complexity task scheduling for heterogeneous computing. *IEEE Trans. Parallel Distrib. Syst.*, 13(3):260–274, March 2002.
- [145] Wolfgang Trumler, Tobias Thiemann, and Theo Ungerer. An artificial hormone system for self-organization of networked nodes. In *Biologically Inspired Cooperative Computing*. Springer, 2006.
- [146] J. R. van Kampenhout. Deterministic task transfer in network-on-chip based multi-core processors. *Computer Engineering*, (18), 2011.
- [147] Ankush Varma, Brinda Ganesh, Mainak Sen, Suchismita Roy Choudhury, Lakshmi Srinivasan, and Bruce Jacob. A control-theoretic approach to dynamic voltage scheduling. In *Proceedings of the 2003*

- International Conference on Compilers, Architecture and Synthesis for Embedded Systems*, CASES'03, pp. 255–266, New York, NY, USA, 2003. ACM.
- [148] G. von Laszewski, Lizhe Wang, A. J. Younge, and Xi He. Power-aware scheduling of virtual machines in DVFS-enabled clusters. In *Proceedings of IEEE International Conference on Cluster Computing and Workshops (CLUSTER)*, pp. 1–10, 2009.
- [149] Lizhe Wang, Gregor von Laszewski, Jay Dayal, and Fugang Wang. Towards Energy Aware Scheduling for Precedence Constrained Parallel Tasks in a Cluster with DVFS. In *Proceedings of IEEE/ACM International Conference on Cluster, Cloud and Grid Computing (CCGRID)*, pp. 368–377, 2010.
- [150] M. Wiczorek, M. Siddiqui, A. Villazon, R. Prodan, and T. Fahringer. Applying advance reservation to increase predictability of workflow execution on the grid. In *Second IEEE International Conference on e-Science and Grid Computing, 2006. e-Science'06*, p. 82, December 2006.
- [151] S. Wildermann, T. Ziermann, and J. Teich. Run time mapping of adaptive applications onto homogeneous NoC-based reconfigurable architectures. In *International Conference on Field-Programmable Technology, 2009. FPT 2009*, pp. 514–517, December 2009.
- [152] Reinhard Wilhelm, Jakob Engblom, Andreas Ermedahl, Niklas Holsti, Stephan Thesing, David Whalley, Guillem Bernat, Christian Ferdinand, Reinhold Heckmann, Tulika Mitra, Frank Mueller, Isabelle Puaut, Peter Puschner, Jan Staschulat, and Per Stenström. The worst-case execution-time problem & mdash; overview of methods and survey of tools. *ACM Trans. Embed. Comput. Syst.*, 7(3):36:1–36:53, May 2008.
- [153] Qiang Wu, Philo Juang, Margaret Martonosi, and Douglas W. Clark. Formal online methods for voltage/frequency control in multiple clock domain microprocessors. *SIGOPS Oper. Syst. Rev.*, 38(5):248–259, October 2004.
- [154] L. Xiao, Y. Zhu, L. M. Ni, and Z. Xu. Incentive-based scheduling for market-like computational grids. *Parallel and Distributed Systems, IEEE Transactions on*, 19(7):903–913, 2008.
- [155] T. T. Ye, L. Benini, and G. De Micheli. Analysis of power consumption on switch fabrics in network routers. pp. 524–529, 2002.
- [156] Chee Shin Yeo and Rajkumar Buyya. A Taxonomy of Market-based Resource Management Systems for Utility-driven Cluster Computing. *Softw. Pract. Exper.*, 36(13):1381–1419, 2006.
- [157] Chee Shin Yeo and Rajkumar Buyya. A taxonomy of market-based resource management systems for utility-driven cluster computing. *Software: Practice and Experience*, 36(13):1381–1419, 2006.

- [158] D. Zhu and C. Qian. Challenges in future automobile control systems with multicore processors. In *Workshop on Developing Dependable and Secure Automotive Cyber-Physical Systems from Components*, 2011.
- [159] H. Zhu, S. Goddard, and M. B. Dwyer. Response time analysis of hierarchical scheduling: The synchronized deferrable servers approach. In *Real-Time Systems Symposium (RTSS), 2011 IEEE 32nd*, pp. 239–248, Nov 2011.
- [160] Qi Zhu, Haibo Zeng, Wei Zheng, Marco DI Natale, and Alberto Sangiovanni-Vincentelli. Optimization of task allocation and priority assignment in hard real-time distributed systems. *ACM Trans. Embed. Comput. Syst.*, 11(4):85:1–85:30, January 2013.
- [161] Xue-Yang Zhu, Marc Geilen, Twan Basten, and Sander Stuijk. Static rate-optimal scheduling of multirate DSP algorithms via retiming and unfolding. In *Proceedings of the 2012 IEEE 18th Real Time and Embedded Technology and Applications Symposium, RTAS'12*, pp. 109–118, Washington, DC, USA, 2012. IEEE Computer Society.
- [162] Yifan Zhu and F. Mueller. Feedback edf scheduling exploiting dynamic voltage scaling. In *Real-Time and Embedded Technology and Applications Symposium, 2004. Proceedings. RTAS 2004. 10th IEEE*, pp. 84–93, May 2004.

