

**Publication List**  
**Alex Yakovlev**

**Authored Monographs:**

1. J. Cortadella, M. Kishinevsky, A. Kondratyev, L. Lavagno and A. Yakovlev. Logic Synthesis of Asynchronous Controllers and Interfaces, Springer Series in Advanced Microelectronics, vol. 8, Springer, 2002, ISBN-3-540-43152-7.

**Edited Monographs:**

1. M. Koutny, S. Haddad and A. Yakovlev (Eds). Transactions on Petri Nets and Other Models of Concurrency VIII, Lecture Notes in Computer Science, vol. 8910, ISBN 978-3-662-45729-0, Springer-Verlag, 2014, 279 p.
2. M. Koutny, W.M.P. van der Aalst and A. Yakovlev (Eds). Transactions on Petri Nets and Other Models of Concurrency VIII, Lecture Notes in Computer Science, vol. 8100, ISBN 978-3-642-40465-8, Springer-Verlag, 2013, 203 p.
3. J.L. Ayala, D. Shang and A. Yakovlev (Eds). Integrated Circuit and System Design, Power and Timing Modeling, Optimization and Simulation, 22<sup>nd</sup> Int. Workshop, PATMOS 2012, Newcastle upon Tyne, UK, September 2012, Revised Selected Papers, Lecture Notes in Computer Science, vol. 7606, ISBN 978-3-642-36156-2, Springer-Verlag, 2013, 258 p.
4. J. Kleijn and A. Yakovlev (Eds). Petri nets and Other Models of Concurrency – ICATPN 2007, Lecture Notes in Computer Science, vol. 4546, ISBN 978-3-540-73093-4, Springer-Verlag, 2007, 515 p.
5. J. Cortadella, A. Yakovlev and G. Rozenberg (Eds.). Concurrency and Hardware Design (Advances in Petri Nets), Lecture Notes in Computer Science, vol. 2549, ISBN-3-540-00199-9, Springer-Verlag, 2002, 345 p.
6. A. Yakovlev and R. Nouta (Eds.) Asynchronous Interfaces: Tools, techniques, and Implementations (AINT'2000), TU Delft, The Netherlands, July 2000, ISBN 90-5326-037-4, 158 p.
7. A. Yakovlev, L. Gomes and L. Lavagno (Eds.) Hardware Design and Petri Nets. Kluwer Academic Publishers, Boston, ISBN 0-7923-7791-5, March 2000, 344 p.

**Journal papers (refereed):**

1. Rafiev, A., Morris, J., Xia, F., Yakovlev, A., Naylor, M., Moore, S., Thomas, D., Bragg, G., Vousden, M. and Brown, A. (2022). Practical Distributed Implementation of Very Large Scale Petri Net Simulations. In: Koutny, M., Kordon, F., Moldt, D. (eds) Transactions on Petri Nets and Other Models of Concurrency XVI. Lecture Notes in Computer Science, vol 13220. Springer, Berlin, Heidelberg, pp. 112-139. [https://doi.org/10.1007/978-3-662-65303-6\\_6](https://doi.org/10.1007/978-3-662-65303-6_6)

2. Ventisei, A., Yakovlev, A. and Pacheco-Peña, V. (2022), Exploiting Petri Nets for Graphical Modelling of Electromagnetic Pulse Switching Operations. *Adv. Theory Simul.* 2100429. <https://doi.org/10.1002/adts.202100429>
3. Abeyrathna, K. D., Granmo, O.-C., Shafik, R., Jiao, L., Wheeldon, A., Yakovlev, A., Lei, J., & Goodwin, M. (2021). A multi-step finite-state automaton for arbitrarily deterministic Tsetlin Machine learning. *Expert Systems*, 1-17. <https://doi.org/10.1111/exsy.12836>
4. Lei, J.; Rahman, T.; Shafik, R.; Wheeldon, A.; Yakovlev, A.; Granmo, O.-C.; Kawsar, F.; Mathur, A. Low-Power Audio Keyword Spotting Using Tsetlin Machines. *J. Low Power Electron. Appl.* **2021**, *11*, 18. <https://doi.org/10.3390/jlpea11020018>
5. M. Koutny, M. Pietkiewicz-Koutny, and A. Yakovlev, Asynchrony and persistence in reaction systems, *Theoretical Computer Science*, Volume 881, 2021, Pages 97-110, ISSN 0304-3975, <https://doi.org/10.1016/j.tcs.2020.11.040>.
6. A. Wheeldon, R. Shafik, T. Rahman, J. Lei, A. Yakovlev, O.-C. Granmo, "Learning automata based energy-efficient AI hardware design for IoT applications", *Phil. Trans. R. Soc. A, Math, Phys. and Eng Sci.*, Issue compiled and edited by G. Tian and T. Theodoulidis, Vol. 378, Issue 2182, 16 October 2020, <http://dx.doi.org/10.1098/rsta.2019.0593>
7. A. Aalsaud, F. Xia, A. Rafiev, R. Shafik, A. Romanovsky and A. Yakovlev, "Low-complexity run-time management of concurrent workloads for energy-efficient multi-core systems", in *Journal of Low Power Electronics and Applications*, vol. 10, no.3, 2020, <https://doi.org/10.3390/jlpea10030025>.
8. M. Al-Daloo, M. A. Abufalgha, A. Yakovlev and B. Halak, "Bootstrapped Driver and the Single-Event-Upset Effect," in *IEEE Transactions on Circuits and Systems I: Regular Papers*, vol. 67, no. 10, pp. 3309-3319, Oct. 2020, doi: 10.1109/TCSI.2020.3008112.
9. M. A. N. Al-hayanni, F. Xia, A. Rafiev, A. Romanovsky, R. Shafik and A. Yakovlev, "Amdahl's law in the context of heterogeneous many-core systems – a survey," in *IET Computers & Digital Techniques*, vol. 14, no. 4, pp. 133-148, 7 2020, doi: 10.1049/iet-cdt.2018.5220.
10. M. A. N. Al-hayanni, A. Rafiev, F. Xia, R. A. Shafik, A. Romanovsky and A. Yakovlev, "PARMA: Parallelization-Aware Run-time Management for Energy-Efficient Many-Core Systems," in *IEEE Transactions on Computers*. vol. 69, no. 10, pp. 1507-1518, 1 Oct. 2020, doi: 10.1109/TC.2020.2975787.
11. M. Al-Daloo, A. Soltan and A. Yakovlev, "Advance Interconnect Circuit Modelling Design Using Fractional-Order Elements," in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, vol. 39, no. 10, pp. 2722-2734, Oct. 2020, doi:10.1109/TCAD.2019.2962779.
12. D. Sokolov, V. Khomenko, A. Mokhov, V. Dubikhin, D. Lloyd and A. Yakovlev, "Automating the Design of Asynchronous Logic Control for AMS Electronics," in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, vol. 39, no. 5, pp. 952-965, May 2020, doi: 10.1109/TCAD.2019.2907905

13. S. Mileiko, T. Bunnam, F. Xia, R. Shafik, A. Yakovlev, S. Das, Neural network design for energy-autonomous artificial intelligence applications using temporal encoding, *Phil. Trans. Royal Soc A, Math, Phys. and Eng Sci.*, Issue compiled and edited by R. Shafik and Alex Yakovlev, vol. 378, Issue 2164, 23 Dec. 2019, doi: 10.1098/rsta.2019.0166
14. R. Shafik, A. Yakovlev, Harmonizing energy-autonomous computing and intelligence: an editorial introduction, *Phil. Trans. Royal Soc A, Math, Phys. and Eng Sci.*, Issue compiled and edited by R. Shafik and Alex Yakovlev, vol. 378, Issue 2164, 23 Dec. 2019, doi: 10.1098/rsta.2019.0594
15. S. Maheshwari, V. Y. Gudur, R. Shafik, I. Wilson, A. Yakovlev and A. Acharyya, "CORAL: Verification-Aware OpenCL Based Read Mapper for Heterogeneous Systems," in *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, vol. 18, no. 4, pp. 1426-1438, 1 July-Aug. 2021, doi: 10.1109/TCBB.2019.2943856.
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19. A. Yakovlev, "Energy current and computing," *Phil. Trans. Royal Soc A, Math, Phys. and Eng Sci.* Theme issue Celebrating 125 years of Oliver Heaviside's 'Electromagnetic Theory' compiled and edited by Christopher Donaghy-Spargo and Alex Yakovlev, vol. 376, Issue 2134, 15 Nov. 2018, doi: 10.1098/rsta.2017.0449
20. C. Donaghy-Spargo and A. Yakovlev, "Oliver Heaviside's electromagnetic theory," *Phil. Trans. Royal Soc A, Math, Phys. and Eng Sci.* Theme issue Celebrating 125 years of Oliver Heaviside's 'Electromagnetic Theory' compiled and edited by Christopher Donaghy-Spargo and Alex Yakovlev, vol. 376, Issue 2134, 15 Nov. 2018, doi: 10.1098/rsta.2018.0229
21. J. Beaumont, A. Mokhov, D. Sokolov and A. Yakovlev, "High-Level Asynchronous Concepts at the Interface Between Analog and Digital Worlds," in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, vol. 37, no. 1, pp. 61-74, Jan. 2018. doi: 10.1109/TCAD.2017.2748002
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24. A. Rafiev, M. A. N. Al-Hayanni, F. Xia, R. Shafik, A. Romanovsky and A. Yakovlev, "Speedup and Power Scaling Models for Heterogeneous Many-Core Systems," in *IEEE Transactions on Multi-Scale Computing Systems*, vol. 4, no. 3, pp. 436-449, 1 July-Sept. 2018.  
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36. J.S. Guido and A. Yakovlev, Design of Self-Timed Reconfigurable Controllers for Parallel Synchronization via Wagging, *Very Large Scale Integration (VLSI) Systems, IEEE Transactions on* , vol.23, no.2, pp.292-305, Feb. 2015 doi: 10.1109/TVLSI.2014.2306176
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#### **Conference Presentations (not formally refereed):**

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2. R. Ramezani, A. Bystrov, A. Yakovlev, Energy-aware system for efficient powering and controlling of the computational load, UK Electronics Forum (UKEF 2010), Newcastle, June-July 2010.
3. M. Rykunov, A. Mokhov, A. Yakovlev, A. Koelmans, Automated Generation of Control Logic for Processor Architectures, UK Electronics Forum (UKEF 2010), Newcastle, June-July 2010.

4. Raaed Al-Dujaily, Li Dai, Fei Xia, Delong Shang and Alex Yakovlev, NoC Monitoring Infrastructure: A Supervisory and Control Service, 21<sup>st</sup> UK Asynchronous Forum, Bristol, Sept. 2009.
5. Li Dai, Raaed Al-Dujaily, Fei Xia, Delong Shang and Alex Yakovlev, Network-on-Chip Monitoring and Diagnostic System, 21<sup>st</sup> UK Asynchronous Forum, Bristol, Sept. 2009.
6. Yu Zhou and Alex Yakovlev, Dynamic Concurrency Reduction for Power Management, 21<sup>st</sup> UK Asynchronous Forum, Bristol, Sept. 2009.
7. Arseniy Alekseyev, Ivan Poliakov, Victor Khomenko and Alex Yakovlev, Optimisation of Balsa Control Path Using STG Resynthesis, 21<sup>st</sup> UK Asynchronous Forum, Bristol, Sept. 2009.
8. Matthew Cunningham, Robin Emery, Alex Yakovlev and Alton Horsfall, Ultra Low Power Circuit Possibilities for Resilient Technologies, 21<sup>st</sup> UK Asynchronous Forum, Bristol, Sept. 2009.
9. Andrey Mokhov, Ulan Degenbaev and Alex Yakovlev, Synthesis of Instruction Codes in the Context of Asynchronous Microcontrol Design, 21<sup>st</sup> UK Asynchronous Forum, Bristol, Sept. 2009.
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11. A. Mokhov, A. Yakovlev, Introduction to Conditional Partial Order Graphs, 5th UK Embedded Forum, Leicester, Sept 2009.
12. Y. Chen, F. Xia, D. Shang, A. Yakovlev, Stochastic Modeling of Dynamic Power Management Policies and Analysis of Their Power-Latency Tradeoffs, 4<sup>th</sup> UK Embedded Forum, Southampton, 9-10 Sept 2008.
13. Asur Rafiev, Julian Murphy, Danil Sokolov and Alex Yakovlev. Bitwise Gate Grouping Algorithm for Mixed Radix Conversion, 20<sup>th</sup> UK Asynchronous Forum, Manchester, September 2008.
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15. Stanislavs Golubcovs, Andrey Mokhov and Alex Yakovlev. Multi-resource Arbiter Design, 0<sup>th</sup> UK Asynchronous Forum, Manchester, September 2008.
16. Andrey Mokhov and Alex Yakovlev. Synthesis of multiple rail phase encoding circuits, 20<sup>th</sup> UK Asynchronous Forum, Manchester, September 2008.
17. Panagiotis Asimakopoulos and Alex Yakovlev, An Adiabatic Power-Supply Controller for Asynchronous Logic Circuits, 20<sup>th</sup> UK Asynchronous Forum, Manchester, September 2008.
18. Robin Emery, Alex Yakovlev and Graeme Chester. Dense-Near/Sparse-Far Hybrid Reconfigurable Neural Network Chip, 20<sup>th</sup> UK Asynchronous Forum, Manchester, September 2008.
19. Basel Halak, Alex Yakovlev, Throughput-Centric Optimisation for fixed width Links with Crosstalk Avoidance Methods, 19<sup>th</sup> UK Asynchronous Forum, London, September 2007.

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