

Liste der Veröffentlichungen

- [1] Christel Baier, Calvin Chau, and Sascha Klüppelholz. Certificates and witnesses for multi-objective queries in Markov decision processes. In *Proceedings of the First International Joint Conference on Quantitative Evaluation of Systems and Formal Modeling and Analysis of Timed Systems QEST+FORMATS*, volume 14996 of *Lecture Notes in Computer Science*, pages 1–18. Springer, 2024.
- [2] Christel Baier, Roxane van den Bossche, Sascha Klüppelholz, Johannes Lehmann, and Jakob Piribauer. Backward responsibility in transition systems using general power indices. In *Proceedings of the Thirty-Eighth Conference on Artificial Intelligence, AAAI 2024*, pages 20320–20327. AAAI Press, 2024.
- [3] Max Korn, Julián Méndez, Sascha Klüppelholz, Ricardo Langner, Christel Baier, and Raimund Dachse. PMC-VIS: an interactive visualization tool for probabilistic model checking. In *Proceedings of the 21st International Conference on Software Engineering and Formal Methods SEFM’23*, volume 14323 of *Lecture Notes in Computer Science*, pages 361–375. Springer, 2023.
- [4] P. Chrszon, C. Baier, C. Dubslaff, and S. Klüppelholz. Interaction detection in configurable systems – a formal approach featuring roles. *Journal of Systems and Software*, 196:111556, 2023.
- [5] T. John, S. Jantsch, C. Baier, and S. Klüppelholz. From Emerson-Lei automata to deterministic, limit-deterministic or good-for-MDP automata. *Innovations in Systems and Software Engineering (ISSE)*, 18:385–403, 2022.
- [6] T. John, S. Jantsch, C. Baier, and Sascha Klüppelholz. Determinization and limit-determinization of Emerson-Lei automata. In *Proceedings of the 19th International Symposium on Automated Technology for Verification and Analysis (ATVA’21)*, volume 12971 of *Lecture Notes in Computer Science*, pages 15–31. Springer, 2021. (Best Paper Award).
- [7] C. Baier, C. Dubslaff, H. Hermanns, M. Klauck, S. Klüppelholz, and M. A. Köhl. Components in probabilistic systems: Suitable by construction. In *Proceedings of the 9th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation (ISoLA’20)*, volume 12476 of *Lecture Notes in Computer Science*, pages 240–261. Springer, 2020.
- [8] M. Raitza, S. Märcker, J. Trommer, A. Heintzig, S. Klüppelholz, C. Baier, and A. Kumar. Quantitative Characterization of Reconfigurable Transistor Logic Gates. *IEEE Access*, 8:112598–112614, 2020.
- [9] P. Chrszon, C. Baier, C. Dubslaff, and S. Klüppelholz. From features to roles. In *24th ACM International Systems and Software Product Line Conference (SPLC’20)*, pages 19:1–19:11. ACM, 2020.

- [10] M.U. Sardar, C. Dubslaff, S. Klüppelholz, C. Baier, and A. Kumar. Performance evaluation of thermal-constrained scheduling strategies in multi-core systems. In M. Gribaudo, M. Iacono, T. Phung-Duc, and R. Razumchik, editors, *Computer Performance Engineering*, volume 12039 of *Lecture Notes in Computer Science*, pages 133–147. Springer, 2020.
- [11] T. Stumpf, L. Herrmann, M. Küttler, S. Klüppelholz, C. Baier, and H. Härtig. Configuration of Inter-Process Communication with Probabilistic Model Checking. *International Journal on Software Tools for Technology Transfer (STTT)*, 21(6):651–666, 2019.
- [12] L. Herrmann, C. Baier, C. Fetzer, S. Klüppelholz, and M. Napierkowski. Formal Parameter Synthesis for Energy-Utility-Optimal Fault Tolerance. In *Proceedings of the 15th European Performance Engineering Workshop (EPEW’18)*, volume 11178 of *Lecture Notes in Computer Science*, pages 78–93. Springer, 2018.
- [13] C. Baier, P. Chrszon, C. Dubslaff, J. Klein, and S. Klüppelholz. Energy-Utility Analysis of Probabilistic Systems with Exogenous Coordination. In F. de Boer, M. Bonsangue, and J. Rutten, editors, *It’s All About Coordination: Essays to Celebrate the Lifelong Scientific Achievements of Farhad Arbab*, volume 10865 of *Lecture Notes in Computer Science*, pages 38–56. Springer, 2018.
- [14] P. Chrszon, C. Dubslaff, S. Klüppelholz, and C. Baier. ProFeat: feature-oriented engineering for family-based probabilistic model checking. *Formal Aspects of Computing*, 30(1):45–75, 2018.
- [15] J. Klein, C. Baier, P. Chrszon, M. Daum, C. Dubslaff, S. Klüppelholz, S. Märcker, and D. Müller. Advances in Probabilistic Model Checking with PRISM: Variable Reordering, Quantiles and Weak Deterministic Büchi Automata. *International Journal on Software Tools for Technology Transfer (STTT)*, 20(2):179–194, 2018.
- [16] J. Castrillon, M. Lieber, S. Klüppelholz, M. Völp, N. Asmussen, U. Aßmann, F. Baader, C. Baier, G. Fettweis, J. Fröhlich, A. Goens, S. Haas, D. Habich, H. Härtig, M. Hasler, I. Huisman, T. Karnagel, S. Karol, A. Kumar, W. Lehner, L. Leuschner, S. Ling, S. Märcker, C. Menard, J. Mey, W. Nagel, B. Nöthen, R. Peñaloza, M. Raitza, J. Stiller, A. Ungethüm, A. Voigt, and S. Wunderlich. A hardware/software stack for heterogeneous systems. *IEEE Transactions on Multi-Scale Computing Systems*, November 2017.
- [17] S. Märcker, C. Baier, J. Klein, and S. Klüppelholz. Computing conditional probabilities: Implementation and evaluation. In *Proceedings of the 15th International Conference on Software Engineering and Formal Methods (SEFM’17)*, volume 10469, pages 349–366. Springer, 2017.
- [18] C. Baier, S. Klüppelholz, and S. Wunderlich. Towards Automated Variant Selection for Heterogeneous Tiled Architectures. In Luca Aceto, Giorgio Bacci, Giovanni Bacci, Anna Ingólfssdóttir, Axel Legay, and Radu Mardare, editors, *Models, Algorithms, Logics and Tools: Essays Dedicated to Kim Guldstrand Larsen*

on the Occasion of His 60th Birthday, volume 10460 of *Lecture Notes in Computer Science*, pages 382–399. Springer, 2017.

- [19] L. Leuschner, M. Küttler, T. Stumpf, C. Baier, H. Härtig, and S. Klüppelholz. Towards automated configuration of systems with non-functional properties. In *Proceedings of the 16th Workshop on Hot Topics in Operating Systems (HotOS'17)*, pages 111–117. ACM, 2017.
- [20] C. Baier, J. Klein, S. Klüppelholz, and S. Wunderlich. Maximizing the conditional expected reward for reaching the goal. In *Proceedings of the 23rd International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS), Part II*, volume 10206 of *Lecture Notes in Computer Science*, pages 269–285. Springer, 2017.
- [21] M. Völz, S. Klüppelholz, J. Castrillon, H. Härtig, N. Asmussen, U. Aßmann, F. Baader, C. Baier, G. Fettweis, J. Fröhlich, A. Goens, S. Haas, D. Habich, M. Hasler, I. Huisman, T. Karnagel, S. Karol, W. Lehner, L. Leuschner, M. Lieber, S. Ling, J. Mey, S. Märcker, W. Nagel, B. Nöthen, R. Peñaloza, M. Raitza, J. Stiller, A. Ungethüm, and A. Voigt. The Orchestration Stack: The Impossible Task of Designing Software for Unknown Future Post-CMOS Hardware. In *Proceedings of the 1st Workshop on Post-Moore's Era Supercomputing (PMES'16)*, 2016. accepted for publication.
- [22] C. Baier, S. Klüppelholz, H. d. Meer, F. Niedermeier, and S. Wunderlich. Greener Bits: Formal Analysis of Demand Response. In *Proceedings of the 14th International Symposium on Automated Technology for Verification and Analysis (ATVA'16)*, volume 9938 of *Lecture Notes in Computer Science*, pages 323–339. Springer, 2016.
- [23] C. Baier, S. Kiefer, J. Klein, S. Klüppelholz, D. Müller, and J. Worrel. Markov Chains and Unambiguous Büchi Automata. In *Proceedings of the 28th International Conference on Computer Aided Verification (CAV'16) - Part I*, volume 9779 of *Lecture Notes in Computer Science*, pages 23–42. Springer, 2016.
- [24] D. Gburek, C. Baier, and S. Klüppelholz. Composition of stochastic transition systems based on spans and couplings. In *Proceedings of the 43rd International Colloquium on Automata, Languages, and Programming (ICALP'16)*, volume 55 of *Leibniz International Proceedings in Informatics (LIPIcs)*, pages 102:1–102:15. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2016.
- [25] P. Chrszon, C. Dubslaff, C. Baier, J. Klein, and S. Klüppelholz. Modeling Role-Based Systems with Exogenous Coordination. In *Theory and Practice of Formal Methods, Essays Dedicated to Frank de Boer on the Occasion of His 60th Birthday*, volume 9660 of *Lecture Notes in Computer Science*, pages 122–139. Springer, 2016.
- [26] J. Klein, C. Baier, P. Chrszon, M. Daum, C. Dubslaff, S. Klüppelholz, S. Märcker, and D. Müller. Advances in Symbolic Probabilistic Model Checking with PRISM. In *Proceedings of the 22nd International Conference on Tools and Algorithms for*

the Construction and Analysis of Systems (TACAS'16), volume 9636 of *Lecture Notes in Computer Science*, pages 349–366. Springer, 2016.

- [27] P. Chrszon, C. Dubslaff, S. Klüppelholz, and C. Baier. Family-Based Modeling and Analysis for Probabilistic Systems – Featuring ProFeat. In *Proceedings of the 19th International Conference on Fundamental Approaches to Software Engineering (FASE'16)*, volume 9633 of *Lecture Notes in Computer Science*, pages 287–304. Springer, 2016.
- [28] J. Klein, C. Baier, and S. Klüppelholz. Compositional Construction of Most General Controllers. *Acta Informatica*, 52(4-5):443–482, 2015.
- [29] C. Baier, M. Daum, B. Engel, H. Härtig, J. Klein, S. Klüppelholz, S. Märcker, H. Tews, and M. Völpl. Locks: Picking key methods for a scalable quantitative analysis. *Journal of Computer and System Sciences*, 81(1):258–287, 2015.
- [30] C. Dubslaff, C. Baier, and S. Klüppelholz. Probabilistic Model Checking for Feature-oriented Systems. In *Transactions on Aspect-Oriented Software Development XII*, volume 8989 of *Lecture Notes in Computer Science*, pages 180–220. Springer, 2015.
- [31] C. Baier, C. Dubslaff, and S. Klüppelholz. Trade-off Analysis Meets Probabilistic Model Checking. In *Proceedings of the Joint Meeting of the 23rd EACSL Annual Conference on Computer Science Logic and the 29th Annual ACM/ IEEE Symposium on Logic In Computer Science (CSL/LICS'14)*, pages 1:1–1:10. ACM, 2014.
- [32] C. Baier, C. Dubslaff, S. Klüppelholz, and L. Leuschner. Energy-Utility Analysis for Resilient Systems Using Probabilistic Model Checking. In *Proceedings of the 35th International Conference on Application and Theory of Petri Nets and Concurrency (PETRI NETS'14)*, volume 8489 of *Lecture Notes in Computer Science*, pages 20–39. Springer, 2014.
- [33] C. Baier, J. Klein, S. Klüppelholz, and S. Wunderlich. Weight Monitoring with Linear Temporal Logic: Complexity and Decidability. In *Proceedings of the Joint Meeting of the 23rd EACSL Annual Conference on Computer Science Logic and the 29th Annual ACM/ IEEE Symposium on Logic In Computer Science (CSL/LICS'14)*, pages 11:1–11:10. ACM, 2014.
- [34] C. Dubslaff, S. Klüppelholz, and C. Baier. Probabilistic Model Checking for Energy Analysis in Software Product Lines. In *Proceedings of the 13th International Conference on Modularity (MODULARITY '14)*, pages 169–180. ACM, 2014.
- [35] C. Baier, C. Dubslaff, S. Klüppelholz, M. Daum, J. Klein, S. Märcker, and S. Wunderlich. Probabilistic Model Checking and Non-standard Multi-objective Reasoning. In *Proceedings of the 17th International Conference on Fundamental Approaches to Software Engineering (FASE'14)*, volume 8411 of *Lecture Notes in Computer Science*, pages 1–16. Springer, 2014.

- [36] C. Baier, M. Daum, C. Dubslaff, J. Klein, and S. Klüppelholz. Energy-Utility Quantiles. In *Proceedings of the 6th NASA Formal Methods Symposium (NFM'14)*, volume 8430 of *Lecture Notes in Computer Science*, pages 285–299. Springer, 2014.
- [37] C. Baier, J. Klein, S. Klüppelholz, and S. Märcker. Computing Conditional Probabilities in Markovian Models Efficiently. In *Proceedings of the 20th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS'14)*, volume 8413 of *Lecture Notes in Computer Science*, pages 515–530. Springer, 2014.
- [38] J. Klein, D. Mueller, C. Baier, and S. Klüppelholz. Are Good-for-Games Automata Good for Probabilistic Model Checking? In *Proceedings of the 8th International Conference on Language and Automata Theory and Applications (LATA'14)*, volume 8370 of *Lecture Notes in Computer Science*, pages 453–465. Springer, 2014.
- [39] C. Baier, J. Klein, and S. Klüppelholz. Synthesis of Reo Connectors for Strategies and Controllers. *Fundamentae Informaticae*, 130:1–20, 2014.
- [40] C. Baier, C. Dubslaff, J. Klein, S. Klüppelholz, and S. Wunderlich. Probabilistic Model Checking for Energy-Utility Analysis. In F. van Breugel, E. Kashefi, C. Palamidessi, and J. Rutten, editors, *Horizons of the Mind. A Tribute to Prakash Panangaden*, volume 8464 of *Lecture Notes in Computer Science*, pages 96–123. Springer, 2014.
- [41] C. Baier, B. Engel, S. Klüppelholz, S. Märcker, H. Tews, and M. Völz. A Probabilistic Quantitative Analysis of Probabilistic-Write/Copy-Select. In *Proceedings of the 5th NASA Formal Methods Symposium (NFM'13)*, volume 7871 of *Lecture Notes in Computer Science*, pages 307–321. Springer, 2013.
- [42] S. Klüppelholz. Formale Verifikation von exogenen Koordinationsmodellen. In *Ausgezeichnete Informatikdissertationen 2012*, volume D-13 of *GI-Edition: Lecture Notes in Informatics*, pages 171–180, 2013.
- [43] S. Klüppelholz. *Verification of Branching-Time and Alternating-Time Properties for Exogenous Coordination Models*. PhD thesis, Technische Universität Dresden, Germany, 2012.
- [44] C. Baier, M. Daum, B. Engel, H. Härtig, J. Klein, S. Klüppelholz, S. Märcker, H. Tews, and M. Völz. Waiting for Locks: How Long Does It Usually Take? In *Proceedings of the 17th International Workshop on Formal Methods for Industrial-Critical Systems (FMICS'12)*, volume 7437 of *Lecture Notes in Computer Science*, pages 47–62. Springer, 2012.
- [45] C. Baier, M. Daum, B. Engel, H. Härtig, J. Klein, S. Klüppelholz, S. Märcker, H. Tews, and M. Völz. Chiefly Symmetric: Results on the Scalability of Probabilistic Model Checking for Operating-System Code. In *Proceedings of the 7th*

Conference on Systems Software Verification (SSV'12), volume 102 of *Electronic Proceedings in Theoretical Computer Science*, pages 156–166, 2012.

- [46] J. Klein, S. Klüppelholz, A. Stam, and C. Baier. Hierarchical modeling and formal verification. An industrial case study using Reo and Vereofy. In *Formal Methods for Industrial Critical Systems (FMICS'11)*, volume 6959 of *Lecture Notes in Computer Science*, pages 228–243. Springer, 2011.
- [47] C. Baier, J. Klein, and S. Klüppelholz. A Compositional Framework for Controller Synthesis. In *Proceedings of the 22nd International Conference on Concurrency Theory (CONCUR'11)*, volume 6901 of *Lecture Notes in Computer Science*, pages 512–527. Springer, 2011.
- [48] C. Baier, J. Klein, and S. Klüppelholz. Modeling and Verification of Components and Connectors. In *Proceedings of the 11th International School on Formal Methods for the Design of Computer, Communication and Software Systems (SFM'11)*, volume 6659 of *Lecture Notes in Computer Science*, pages 114–147. Springer, 2011.
- [49] C. Baier, J. Klein, and S. Klüppelholz. Synthesis of Reo Connectors for Strategies and Controllers. In *Proceedings of the International Workshop on Logic, Agents, and Mobility (LAM'11)*, 2011.
- [50] C. Baier, T. Blechmann, J. Klein, S. Klüppelholz, and W. Leister. Design and Verification of Systems with Exogenous Coordination using Vereofy. In *Proceedings of the 4th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation (ISoLA'10)*, volume 6416 of *Lecture Notes in Computer Science*, pages 97–111. Springer, 2010.
- [51] C. Baier, T. Blechmann, J. Klein, and S. Klüppelholz. A Uniform Framework for Modeling and Verifying Components and Connectors. In *Proceedings of the 11th International Conference on Coordination Models and Languages (COORDINATION'09)*, volume 5521 of *Lecture Notes in Computer Science*, pages 247–267. Springer, 2009.
- [52] I. Grabe, M. M. Jaghoori, B. Aichernig, C. Baier, T. Blechmann, F. de Boer, A. Griesmayer, E.B. Johnsen, J. Klein, S. Klüppelholz, M. Kyas, W. Leister, R. Schlatte, A. Stam, M. Steffen, S. Tschirner, X. Liang, and W. Yi. Credo Methodology - Extended Version. In *Proceedings of the 8th International Symposium on Formal Methods for Components and Objects (FMCO'09)*, volume 6286 of *Lecture Notes in Computer Science*, pages 41–69. Springer, 2010.
- [53] S. Klüppelholz and C. Baier. Alternating-Time Stream Logic for Multi-agent Systems. In *Proceedings of the 10th International Conference on Coordination Models and Languages (COORDINATION'08)*, volume 5052 of *Lecture Notes in Computer Science*, pages 184–198. Springer, 2008.

- [54] S. Klüppelholz and C. Baier. Alternating-time stream logic for multi-agent systems. *Science of Computer Programming*, 75(6):398–425, 2010. Special Issue on the 10th International Conference on Coordination Models and Languages (COORD’08).
- [55] C. Baier, T. Blechmann, J. Klein, and S. Klüppelholz. Formal Verification for Components and Connectors. In *Proceedings of the 7th International Symposium on Formal Methods for Components and Objects (FMCO’08)*, volume 5751 of *Lecture Notes in Computer Science*, pages 82–101. Springer, 2009.
- [56] S. Klüppelholz and C. Baier. Symbolic model checking for channel-based component connectors. In *Proceedings of the 5th International Workshop on Foundations of Coordination Languages and Software Architectures (FOCLASA’06)*, volume 175(2), pages 19–37. Elsevier Publishers B.V., 2006.
- [57] S. Klüppelholz and C. Baier. Symbolic model checking for channel-based component connectors. *Science of Computer Programming*, 74(9):688–701, 2009. Special Issue on the Fifth International Workshop on Foundations of Coordination Languages and Software Architectures (FOCLASA’06).

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