

COMPLETE LIST OF PUBLICATIONS, PD DR. RER. NAT. MALTE LOCHAU

(01/2019)

Editor

- [1] R. Capilla., M. Lochau, L. Fuentes: Proceedings of the Proceedings of the 12th International Workshop on Variability Modelling of Software-Intensive Systems (VAMOS 2018), Madrid, Spain, February 7-9, ACM, 2018.

Refereed Journal Articles

- [2] L. Luthmann, T. Gerecht, A. Stephan, J. Bürdek, M. Lochau: Minimum/Maximum Delay Testing of Product Lines with Unbounded Parametric Real-time Constraints. In *Journal of Systems and Software*, 2019
- [3] L. Luthmann, S. Mennicke, M. Lochau: Unifying Modal Interface Theories and Compositional Input/Output Conformance Testing. In *Science of Computer Programming*, 2019
- [4] L. Luthmann, T. Gerecht, M. Lochau: Sampling Strategies for Product Lines with Unbounded Parametric Real-time Constraints. In *Springer LNCS Transactions on Foundations for Mastering Change*, 2019
- [5] M. Al-Hajjaji, T. Thüm, M. Lochau, J. Meinicke, G. Saake: Effective Product-Line Testing Using Similarity-Based Product Prioritization. In *Journal of Software & Systems Modeling*, 2016
- [6] J. Bürdek, T. Kehrer, M. Lochau, D. Reuling, U. Kelter, and A. Schürr: Reasoning about Product-Line Evolution using Complex Feature Model Differences. In *Automated Software Engineering Journal, Special Issue on Long Term Evolution of Software Systems*, pages 1-47, Springer, 2015.
- [7] M. Lochau, S. Mennicke, H. Baller, and L. Ribbeck: Incremental Model Checking of Delta-Oriented Software Product Lines. In *Journal of Logical and Algebraic Methods in Programming*, 69, Springer, 2015.
- [8] M. Lochau, J. Bürdek, S. Hölzle, A. Schürr: Specification and Automated Validation of Staged Configuration Processes for Dynamic Software Product Lines. In *Journal of Software & Systems Modeling*, pages 1-28, Springer, 2015.
- [9] M. Lochau, J. Bürdek, S. Lity, M. Hagner, C. Legat, U. Goltz, and A. Schürr: Applying Model-based Software Product Line Testing Approaches to the Automation Engineering Domain. In *Automatisierungstechnik*, 62(11), pages 771–780, 2014.
- [10] M. Lochau, S. Lity, R. Lachmann, I. Schaefer, U. Goltz: Delta-oriented model-based Integration Testing of Large-scale Systems. In *Journal of Systems and Software*, 91, pages 63-84, 2014.

- [11] S. Lity, R. Lachmann, M. Lochau, M. Dukaczewski, and I. Schaefer: Delta-orientiertes Testen von variantenreichen Systemen. In *OBJEKTSpektrum Online, Themenspecial Testing*, Sigis Datacom GmbH, 2013.
- [12] M. Lochau, S. Oster, U. Goltz, A. Schürr: Model-based pairwise testing for feature interaction coverage in software product line engineering. In *Software Quality Journal (SQJ)*, 20(3-4), pages 567-604, 2012.
- [13] M. Gietzelt, U. Goltz, D. Grunwald, M. Lochau, M. Marschollek, B. Song, K.-H. Wolf: Arden2ByteCode: A one-pass Arden Syntax compiler for service-oriented decision support systems based on the OSGi platform. In *Computer Methods and Programs in Biomedicine*, 106(2), pages 114-125, 2012.
- [14] M. Lochau and U. Goltz: Feature Interaction Aware Test Case Generation for Embedded Control Systems. In *Electronic Notes in Theoretical Computer Science (ENTCS)*, 264(3), pages 37-52, Elsevier, 2010.

Refereed Book Chapters

- [15] M. Lochau, S. Peldszus, M. Kowal, I. Schaefer: Model-based Testing. In *Advanced Lectures of the 14th International School on Formal Methods for the Design of Computer, Communication, and Software Systems (SFM)*, pages 310-342, Springer, 2014.

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- [16] M. Weckesser, M. Lochau, M. Ries, A. Schürr: Mathematical Programming for Anomaly Analysis of Clafer Models. In *Proceedings of International Conference on Model Driven Engineering Languages and Systems (MoDELS)*, pages 34 – 44, 2018
- [17] S. Ruland, L. Luthmann, J. Bürdek, S. Lity, T. Thüm, M. Lochau, M. Ribeiro: Measuring Effectiveness of Sample-based Product-Line Testing. In *Proceedings of International Conference on Generative Programming: Concepts and Experiences (GPCE)*, pages 119 – 133, 2018
- [18] G. Kulcsár, M. Lochau, A. Schürr: Graph-Rewriting Petri Nets. In *Proceedings of International Conference on Graph Transformation (ICGT)*, pages 79-96, 2018
- [19] G. Kulcsár, A. Corradini, M. Lochau: Equivalence and Independence in Controlled Graph-Rewriting Processes. In *Proceedings of International Conference on Graph Transformation (ICGT)*, pages 134-151, 2018
- [20] S. Ruland, G. Kulcsár, E. Leblebici, S. Peldszus, M. Lochau: Controlling the Attack Surface on Object-Oriented Refactorings. In *Proceedings of Fundamental Approaches to Software Engineering (FASE)*, pages 38-55, 2018

- [21] S. Peldszus, G. Kulcsár, M. Lochau, S. Schulze: On Continuous Detection of Design Flaws in Evolving Object-Oriented Programs using Incremental Multi-Pattern Matching. In *Proceedings of Software Engineering (SE)*, pages 143-144, 2018
- [22] L. Luthmann, Andreas Stephan, Johannes Bürdek, M. Lochau: Modeling and Testing Product Lines with Unbounded Parametric Real-Time Constraints. In *Proceedings of International Software Product Line Conference (SPLC)*, pages 104 – 113, 2017
- [23] J. Bürdek, T. Kehrer, M. Lochau, D. Reuling, U. Kelter, A. Schürr: Reasoning about Product-Line Evolution using Complex Feature Model Differences. In *Proceedings of Software Engineering 2017*, pages 67 – 68, 2017
- [24] M. Weckesser, M. Lochau, T. Schnabel, B. Richerzhagen, A. Schürr: On Automated Anomaly Detection for Potentially Unbounded Cardinality based Feature Models. In *Proceedings of Software Engineering 2017*, pages 125 – 126, 2017
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- [26] M. Al-Hajjaji, S. Krieter, T. Thüm, M. Lochau, G. Saake: InCLing: Efficient Product-Line Testing using Incremental Pairwise Sampling. In *Proceedings of International Conference on Generative Programming: Concepts & Experiences (GPCE)*, pages 144 - 155, 2016
- [27] L. Luthmann, S. Mennicke, M. Lochau: Compositionality, Decompositionality and Refinement in Input/Output Conformance Testing. In *Proceedings of International Conference of Formal Aspects of Component Software (FACS)*, pages 174 - 191, 2016
- [28] C. Krupitzer, F. M. Roth, C. Becker, M. Weckesser, M. Lochau, A. Schürr: FESAS IDE: An Integrated Development Environment for Automatic Computing. In *Proceedings of International Conference on Autonomous Computing (ICAC)*, pages 15-24, 2016
- [29] M. Lochau, J. Bürdek, S. Bauregger, A. Holzer, A. von Rhein, S. Apel, D. Beyer: On facilitating reuse in multi-goal test-suite generation for software product lines. In *Proceedings of Software Engineering (SE)*, pages 81-82, GI, 2016.
- [30] M. Weckesser, M. Lochau, T. Schnabel, B. Richerzhagen, A. Schürr: Mind the Gap! Automated Anomaly Detection for Potentially Unbounded Cardinality-Based Feature Models. In *Proceedings of Fundamental Approaches to Software Engineering (FASE)*, pages 158-175, Springer, 2016.
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- [32] D. Reuling, J. Bürdek, S. Rotärmel, M. Lochau, and U. Kelter: Fault-based Product-line Testing: Effective Sample Generation-based on Feature-Diagram Mutation. In *Proceedings of International Software Product Line Conference (SPLC)*, pages 131–140, ACM, 2015.
- [33] S. Peldszus, G. Kulcsár, M. Lochau, and S. Schulze: Incremental Co-Evolution of Java Programs based on Bidirectional Graph Transformation. In *Proceedings of Principles and Practices of Programming on The Java Platform (PPPJ)*, pages 138–151, ACM, 2015.

- [34] A. Anjorin, K. Saller, M. Lochau, and A. Schürr: On Modularizing Triple Graph Grammars with Rule Refinement. In *Software Engineering & Management, Multikonferenz der GI-Fachbereiche Softwaretechnik (SWT) und Wirtschaftsinformatik (WI), FA WI-MAW*, pages 95–96, 2015.
- [35] A. Anjorin, K. Saller, M. Lochau, A. Schürr: Modularizing Triple Graph Grammars Using Rule Refinement. In *Proceedings of Fundamental Approaches to Software Engineering (FASE)*, pages 340-354, Springer, 2014.
- [36] H. Baller, S. Lity, M. Lochau, and I. Schaefer: Multi-Objective Test Suite Optimization for Incremental Product Family Testing. In *Proceedings of International Conference on Software Testing, Verification and Validation (ICST)*, pages 303-312, IEEE, 2014.
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- [44] H. Cichos, S. Oster, M. Lochau, and A. Schürr: Model-based Coverage-Driven Test Suite Generation for Software Product Lines. In *Proceedings of International Conference on Model Driven Engineering Languages and Systems (MoDELS)*, pages 425-439, Springer, 2011.
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- [50] M. Varshosaz, M.R. Mousavi, L. Luthmann, M. Lochau, Malte: Expressive Power and Encoding of Transition System Models for Software Product Lines. In: *Proceedings of Nordic Workshop on Programming Theory (NWPT)*, 2017
- [51] M. Weckesser, M. Lochau, M. Ries, A. Schürr: Towards Complete Consistency Checks of Clafer Models. In *Proceedings of International Workshop on Feature-Oriented Software Development (FOSD)*, ACM, 2017
- [52] T. Schnabel, M. Weckesser, R. Kluge, M. Lochau, A. Schürr: CardyGAN: Tool Support for Cardinality-based Feature Models. In *Proceedings of Workshop on Variability Modelling of Softwareintensive Systems (VaMoS)*, ACM, 2016.
- [53] F. Deckwerth, G. Kulcsár, M. Lochau, G. Varró, A. Schürr: Conflict Detection for Edits on Extended Feature Models using Symbolic Graph Transformation. In *Proceedings of Workshop on Formal Methods and Analysis in SPL Engineering (FMSPLE)*, pages 17–31, 2016.
- [54] F. Benduhn, T. Thüm, M. Lochau, T. Leich, and G. Saake: A Survey on Modeling Techniques for Formal Behavioral Verification of Software Product Lines. In *Proceedings of International Workshop on Variability Modelling of Software-intensive Systems (VaMoS)*, ACM, 2015.
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- [56] G. Kulcsár, S. Peldszus, and M. Lochau: A Solution to the Java Refactoring Case Study using eMoflon. In *CEUR Workshop Proceedings of Transformation Tool Contest*, 2015.
- [57] S. Lity, J. Bürdek, M. Lochau, M. Berens, A. Schürr, and I. Schaefer: Re-Engineering Automation Systems as Dynamic Software Product Lines. In *Proceedings of Dagstuhl-Workshop on Model-Based Development of Embedded Systems (MBEES)*, 2015.
- [58] L. Luthmann, S. Mennicke, and M. Lochau: Towards an I/O Conformance Testing Theory for Software Product Lines based on Modal Interface Automata. In *Proceedings of Workshop on Formal Methods and Analysis in SPL Engineering (FMSPLE)*, pages 1–13, 2015.

- [59] J. Bürdek, S. Lity, M. Lochau, M. Berens, U. Goltz, and A. Schürr: Staged Configuration of Dynamic Software Product Lines with Complex Binding Time Constraints. 2014. In *Proceedings of International Workshop on Variability Modelling of Software-intensive Systems (VaMoS)*, ACM, 2014.
- [60] H. Baller and M. Lochau: Towards Incremental Test Suite Optimization for Software Product Lines: In *Proceedings of International Workshop on Feature-Oriented Software Development (FOSD)*, pages 30–36, ACM, 2014.
- [61] K. Saller, M. Lochau, and I. Reimund: Context-Aware DSPLs: Model-Based Runtime Adaptation for Resource-Constrained Systems. In *Proceedings International Software Product Line Conference co-located Workshops*, pages 106 – 113, ACM, 2013.
- [62] S. Schulze, M. Lochau, and S. Brunswig: Implementing Refactorings for FOP - Lessons Learned and Challenges Ahead. In *Proceedings of International Workshop on Feature-Oriented Software Development (FOSD)*, pages 33-40, ACM, 2013.
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- [64] M. Steffens, S. Oster, M. Lochau, and T. Fogdal: Industrial evaluation of pairwise SPL testing with MoSo-PoLiTe. In *Proceedings of International Workshop on Variability Modeling of Software-intensive Systems (VaMoS)*, pages 55–62, ACM, 2012.
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- [75] L. Luthmann, S. Mennicke, M. Lochau: Compositionality, Decompositionality and Refinement in Input/Output Conformance Testing - *Technical Report. arXiv.org, 2016.*
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- [79] J. Schroeter, M. Lochau, and T. Winkelmann: Extended Version of Multi-Perspectives on Feature Models. *Technical Report TU-FI11-07, TU Dresden, 2011.*
- [80] Hans J. Boehm, Ursula Goltz, Holger Hermanns, Peter Sewell (Eds.), edited in cooperation with Christian Eisentraut and Malte Lochau: Multi-Core Memory Models and Concurrency Theory (Dagstuhl Seminar 11011), *Dagstuhl Reports, Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2011*
- [81] T. Müller, M. Lochau, S. Detering, F. Saust, H. Garbers, L. Martin, T. Form, and U. Goltz: A Comprehensive Description of a Model-based, Continuous Development Process for AUTOSAR Systems with Integrated Quality Assurance. *Technical Report 2009-06, TU Braunschweig, 2009.*
- [82] B. Sun, M. Lochau, P. Huhn, and U. Goltz: Parameter Optimization of an Engine Control Unit using Genetic Algorithms. *Technical Report 2009-04, TU Braunschweig, 2009.*

Theses

- [83] M. Lochau: "Model-based Quality Assurance of Cyber-Physical Systems with Variability in Space, over Time, and at Runtime. *Habilitation Thesis, TU Darmstadt*, 2017.
- [84] M. Lochau: Model-Based Conformance Testing of Software Product Lines. *PhD thesis, Verlag Dr. Hut*, 2012.
- [85] M. Lochau: On Synthesizing Statecharts from Live Sequence Chart Specifications. *Diploma Thesis, TU Braunschweig*, 2007.

Teaching Material

- [86] U. Goltz, T. Gehrke, M. Lochau: Vorlesungsskript Compilerbau. TU Braunschweig, 2010
- [87] M. Lochau, J. Kamischke, U. Goltz: Vorlesungsskript Compiler II. TU Braunschweig, 2012