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Experience

06/2011- now	University of Rostock, Germany W3-Professor of Embedded Systems
10/2010-03/2011	University of Potsdam, Germany Substitute Professor of Computer Engineering
06/2005 – 05/2011	Institute Hardware-Software-Co-Design, Computer Science Department at the University of Erlangen-Nuremberg, Erlangen, Germany Habilitation (Researcher)
01/2004 – 05/2011	Head of the System-Level Design Automation (SDA) group at the Institute Hardware-Software-Co-Design, Computer Science Department at the University of Erlangen-Nuremberg, Erlangen, Germany
01/2003 - 05/2005	Institute Hardware-Software-C-Design, Computer Science Department at the University of Erlangen-Nuremberg, Erlangen, Germany Research Assistant
05/2001 - 12/2002	Computer Engineering Group; Electrical Engineering Department at the University of Paderborn, Paderborn, Germany Research Assistant

Education

07/2010	University of Erlangen-Nuremberg, Erlangen, Germany Habilitation (postdoctoral lecture qualification) in Computer Engineering Thesis Title "Design and Verification of Embedded Digital Hardware/Software Systems"
06/2005	University of Erlangen-Nuremberg, Erlangen, Germany Dr.-Ing. (Ph.D.) in Computer Science, <i>summa cum laude</i> Thesis Title: „Automatic Model-Based Design Space Exploration for Embedded Systems – A System Level Approach“.
04/2001	University of Paderborn, Paderborn, Germany Diplom-Ingenieur (Diploma degree) in Electrical Engineering
07/1992	Herder Gymnasium, Minden, Germany Abitur (university entrance diploma)

Professional Services

Memberships:

1. GI (Gesellschaft für Informatik, since 2009 member of the steering committee for the working group on "General Methodologies and Support of Circuit and System Design Processes")
2. Department "Altern des Individuums und der Gesellschaft" der Interdisziplinären Fakultät der Universität Rostock (since 2024).
3. Rostock Centre for Interdisciplinary Implant Research – ROCINI (since 2021, Speaker since 2025)
4. Wissenschaftsverbund IuK, (Wissenschaftsverbund "Entwicklung, Anwendung und Folgen moderner Informations- und Kommunikationstechnologien" der Universität Rostock, since 2012)
5. Zentrum für Künstliche Intelligenz in MV (since 2021)
6. IEEE (Institute of Electrical and Electronics Engineers, 2001-2013, Senior Member 2014-2020)
7. HiPEAC (European Network of Excellence on High Performance and Embedded Architecture and Compilation, 2012-2019)

Editor:

1. MDPI Sensors, Editorial Board Member (since 2020)
2. SICS Software-Intensive Cyber-Physical Systems (since 2019)
3. Elsevier Journal of Systems Architecture, Subject Areas Editor "Multicore" und "Multiprocessor Systems" (2009 - 2014)

Reviewer:

Scientific organizations:

1. German Science Foundation (DFG)
2. Studienstiftung des deutschen Volkes
3. Technology Foundation STW, The Netherlands
4. The German Israeli Foundation for Scientific Research and Development

Textbooks:

5. Springer-Verlag Heidelberg/Berlin

Journals:

6. IEEE
Transactions on Computers, Transactions on Computer Aided Design, Transactions on Parallel and Distributed Systems, Transactions on Very Large Scale Integration Systems, Transactions on Signal Processing, Transactions on Evolutionary Computation, Transactions on Multimedia, Embedded Systems Letters, Design & Test
7. ACM
Transactions on Design Automation of Electronic Systems, Transactions on Embedded Computer Systems, Transactions on Reconfigurable Technology and Systems
8. Springer
Software-Intensive Cyber-Physical Systems, Design Automation for Embedded Systems, Journal of Signal Processing Systems, International Journal of Parallel Programming, Computational Optimization and Applications
9. MDPI
Sensors, Informatics, Journal of Low Power Electronics and Applications
10. EURASIP
Journal on Embedded Systems
11. Elsevier
Microprocessors and Microsystems, Journal of Systems Architecture, Simulation Modelling Practice and Theory

Conference Organization:

1. Methoden und Beschreibungssprachen zur Modellierung und Verifikation von Schaltungen und Systemen 2025 (Workshop Organizer)

2. Conference on Hardware/Software Codesign and System Synthesis 2016, 2017 (Track Chair "System-level design")
3. Design Automation and Test in Europe 2013-2016 (Topic Chair "System Specifications, Models and Methodologies")
4. Conference on Hardware/Software Codesign and System Synthesis 2015 (Track Chair "Embedded systems architecture" and Best Paper Award committee member)
5. Electronic System Level Synthesis Conference 2014 (Program Chair)
6. Methoden und Beschreibungssprachen zur Modellierung und Verifikation von Schaltungen und Systemen 2013 (Workshop Organizer)
7. Forum on Design Languages 2012 (Special Session Organizer "Invasive Programming of Heterogeneous Multi-Core Systems")
8. Design Automation and Test in Europe 2012 (Friday Workshop Organizer "Quo Vadis, Virtual Platforms? - Challenges and Solutions for Today and Tomorrow")
9. Conference on Systems, Architectures, Modeling, and Simulation 2011 (Special Session Organizer "What's next in ESL", pp. 330)
10. Conference on Systems, Architectures, Modeling, and Simulation 2010 (Topic Chair "Design Automation")
11. Compiler-Assisted System-On-Chip Assembly 2010 (Workshop Organizer)
12. Methoden und Beschreibungssprachen zur Modellierung und Verifikation von Schaltungen und Systemen 2007 (Workshop Organizer)

Program Committee:

1. International Conference on Computer-Aided Design 2011 – 2013, 2022 – 2025
2. Conference on Hardware/Software Codesign and System Synthesis 2007 – 2025
3. Conference on Conference on Bio-inspired Systems and Signal Processing - 2025
4. Workshop on Rapid Simulation and Performance Evaluation: Methods and Tools 2016 – 2025
5. Design and Verification Conference & Exhibition Europe (DVCon Europe) 2025
6. Methoden und Beschreibungssprachen zur Modellierung und Verifikation von Schaltungen und Systemen 2007 – 2025
7. Conference on Systems, Architectures, Modeling, and Simulation 2010 – 2025
8. Forum on Design Languages 2006 – 2019, 2021
9. Workshop on Software and Compilers for Embedded Systems 2012 – 2014, 2016 – 2021
10. International Conference on Language, Compilers, Tools and Theory of Embedded Systems 2019
11. Design Automation and Test in Europe 2008 – 2016
12. International Workshop on Multi-Objective Many-Core Design 2014 – 2016
13. Workshop on Integrating Dataflow, Embedded computing and Architecture 2016
14. Design Automation Conference 2015
15. Electronic System Level Synthesis Conference 2011 – 2015
16. Asia and South Pacific Design Automation Conference 2014
17. International Conference on Embedded and Ubiquitous Computing 2014
18. Real-Time and Embedded Technology and Applications Symposium 2013
19. Reconfigurable Architectures Workshop 2012
20. Workshop on Cyber-Physical Systems 2011, 2012
21. Conference on Evolutionary Multi-Criterion Optimization 2007 – 2011
22. Congress on Evolutionary Computation 2005 - 2010
23. Workshop on Systems, Architectures, Modeling, and Simulation 2009
24. Conference on Computational Intelligence and Security 2007, 2008
25. Genetic and Evolutionary Computation Conference 2006

Publications

Books:

1. C. Haubelt and F. Grützmacher: Methoden und Beschreibungssprachen zur Modellierung und Verifikation von Schaltungen und Systemen, MBMV 2025, 28th Workshop, Rostock, Germany, 11-12 March 2025. VDE/IEEE 2025, ISBN 978-3-8007-6516-4
2. C. Haubelt and D. Timmermann. *Methoden und Beschreibungssprachen zur Modellierung und Verifikation von Schaltungen und Systemen*. Rostock, Germany, 2013.
3. C. Haubelt and J. Teich. *Digitale Hardware/Software-Systeme: Spezifikation und Verifikation*. Springer-Verlag, Berlin Heidelberg, 2010.
4. J. Teich and C. Haubelt. *Digitale Hardware/Software-Systeme: Synthese und Optimierung*. 2. Auflage, Springer-Verlag, Berlin Heidelberg, 2007.
5. C. Haubelt and J. Teich. *Methoden und Beschreibungssprachen zur Modellierung und Verifikation von Schaltungen und Systemen*. Shaker Verlag, Aachen, Germany, 2007.
6. C. Haubelt. *Automatic Model-Based Design Space Exploration for Embedded Systems - A System Level Approach*. Dissertation, University of Erlangen-Nuremberg, ISBN 3-89574-572-3, © Verlag Dr. Köster, Berlin, 2005.

Book Chapters:

1. J. Falk, K. Neubauer, C. Haubelt, C. Zebelein, and J. Teich. *Integrated Modeling Using Finite State Machines and Dataflow Graphs*. In Handbook of Signal Processing Systems, 3rd ed., pp. 825 – 864, Springer, 2019.
2. J. Falk, C. Haubelt, J. Teich, and C. Zebelein. *SysteMoC: A Dataflow Programming Model for Codesign*, In Handbook of Hardware/Software Co-Design, pp. 1-39, Springer, 2017.
3. S Ha, J. Teich, C. Haubelt, M. Glaß, T. Mitra, R. Dömer, P. Eles, A. Shrivastava, A. Gerstlauer, and S. S. Bhattacharyya. *Introduction to Hardware/Software Co-Design*. In Handbook of Hardware/Software Co-Design, pp. 1-24, Springer, 2017.
4. J. Falk, C. Haubelt, C. Zebelein, and J. Teich. *Integrated Modeling Using Finite State Machines and Dataflow Graphs*. In Handbook of Signal Processing Systems, 2nd ed., pp. 975-1013, Springer, 2013.
5. M. Streubühr, J. Gladigau, C. Haubelt and J. Teich. *Efficient Approximately-Timed Performance Modeling for Architectural Exploration of MPSoCs*. In Advances in Design Methods from Modeling Languages for Embedded Systems and SoC's, pp. 59-72, Springer, 2010.
6. J. Falk, J. Keinert, C. Haubelt, J. Teich and C. Zebelein. *Integrated Modeling Using Finite State Machines and Dataflow Graphs*. In Handbook of Signal Processing Systems, pages 1041-1075, Springer, 2010.
7. C. Haubelt, D. Koch, F. Reimann, T. Streichert and J. Teich. *ReCoNets – Design Methodology for Embedded Systems Consisting of Small Networks of Reconfigurable Nodes and Connections*. In Dynamically Reconfigurable Systems - Architectures, Design Methods and Applications, pages 223-244. Springer, Heidelberg, 2010.
8. J. Gladigau, C. Haubelt and J. Teich. *Symbolic Scheduling of SystemC Dataflow Designs*. In M. Radetzki, editor, Languages for Embedded Systems and their Applications, volume 36 of Lecture Notes in Electrical Engineering, pages 183–199. Springer Netherlands, 2009.
9. T. Streichert, C. Haubelt, D. Koch and J. Teich. *Concepts for Self-Adaptive and Self-Healing Networked Embedded Systems*. Organic Computing, Rolf Würtz (Ed.), Springer Series Understanding Complex Systems, pp. 241-260, Springer, 2008.
10. B. Niemann, C. Haubelt, M. Uribe and J. Teich. *Formalizing TLM with Communicating State Machines*. In Advances in Design and Specification Languages for Embedded Systems, pp. 225-242, Springer, 2007.
11. C. Haubelt, S. Mostaghim, F. Slomka, J. Teich and A. Tyagi. *Hierarchical Synthesis of Embedded Systems Using Evolutionary Algorithms*. In Evolutionary Algorithms in System Design by Drechsler, R. and Drechsler, N., in Genetic Algorithms and Evolutionary

- Computation (GENA), pp. 63-104, Kluwer Academic Publishers, Boston, Dordrecht, London, 2003.
12. C. Haubelt, J. Teich, K. Richter and R. Ernst. *Flexibility / Cost-Tradeoffs of Platform-Based Systems*. In Embedded Processor Design Challenges, E. Deprettere, J. Teich, and S. Vassiliadis, editors, Lecture Notes in Computer Science (LNCS), Vol. 2268, pp. 38-56, Springer, Berlin, Germany, March 2002.

Reviewed Journal Articles:

1. A. Küster, R. Dorsch, and C. Haubelt. *Towards Fast Heterogeneous Virtual Prototypes: Increasing the Solver Efficiency in SystemC-AMS*. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems. 2025 (to appear)
2. N. Schumacher, F. Geiger, S. Spors, R. Bader, C. Haubelt, D. Kluess, *Detection of Total Hip Replacement Loosening Based on Structure-Borne Sound: Influence of the Position of the Sensor on the Hip Stem*. Sensors 24, 4594, 2024.
3. L. Müller, N. Schumacher, L. Steffen, and C. Haubelt. *Generative Design of the Architecture Platform in Multiprocessor System Design*. Electronics 13, no. 7: 1404. 2024.
4. L. Müller, P. Wanko, C. Haubelt, and T. Schaub. *Investigating Methods for ASPmT-based Design Space Exploration in Evolutionary Product Design*. In International Journal of Parallel Programming, Springer, 2024.
5. F. Hölzke, H. Borstell, F. Golatowski, C. Haubelt. *Pedestrian Localization with Stride-Wise Error Estimation and Compensation by Fusion of UWB and IMU Data*. Sensors. 2023; 23(10):4744. <https://doi.org/10.3390/s23104744>
6. C. Haubelt, Luise Müller, Kai Neubauer, Torsten Schaub, Philipp Wanko. *Evolutionary System Design with Answer Set Programming*. Algorithms 2023, 16, 179. <https://doi.org/10.3390/a16040179>
7. P. Wilsdorf, J. Heller, K. Budde, J. Zimmermann, T. Warnke, C. Haubelt, D. Timmermann, U. Van Rienen, A. Uhrmacher. *A Model-Driven Approach for Conducting Simulation Experiments*. In Applied Sciences 2022, 12(16), 7977, 2022.
8. C. Haubelt and A. Rausch. *Improving Symbolic System-Level Synthesis by Solver Coordination and Domain-Specific Heuristics*. In Electronics 2022, 11(12), 1888, 2022.
9. M. Rethfeldt, T. Brockmann, B. Beichler, C. Haubelt, D. Timmermann. *Adaptive Multi-Channel Clustering in IEEE 802.11s Wireless Mesh Networks*. In Sensors, 21(21), 7215, 2021.
10. D. Gis, N. Büscher, C. Haubelt. *Real-Time Power Analysis of Smart Sensors Using Advanced Debugging Methods*. In Micromachines 2021, 12(11), 1276, 2021.
11. F. Grützmaker, J. Kempfle, K. van Laerhoven, and C. Haubelt. *fastSW: Efficient Piecewise Linear Approximation of Quaternion-Based Orientation Sensor Signals for Motion Capturing with Wearable IMUs*. In Sensors 21(15), 5180, 2021.
12. D. Gis, N. Büscher, C. Haubelt. *Investigation of Timing Behavior and Jitter in a Smart Inertial Sensor Debugging Architecture*. In Sensors 21(8), 4675, 2021.
13. N. Büscher, D. Gis, V. Kühn, C. Haubelt. *On the Functional and Extra-Functional Properties of IMU Fusion Algorithms for Body-Worn Smart Sensors*. In Sensors 21(8), 2747, 2021.
14. K. Neubauer, B. Beichler, and C. Haubelt. *Exact Design Space Exploration Based on Consistent Approximations*. Electronics 9(7),1057, 2020.
15. F. Hölzke, J.-P. Wolff, F. Golatowski, and C. Haubelt. *Low-Complexity Online Correction and Calibration of Pedestrian Dead Reckoning Using Map Matching and GPS*. In Journal Geo-Spatial Information, pp. 1-14, Mai 2019
16. F. Grützmaker, A. Hein, T. Kirste, and C. Haubelt. *Model-Based Design of Energy Efficient Human Activity Recognition Systems with Wearable Sensors*. Technologies 6(4), 89:1 – 89:20, 2018.
17. M. Rethfeldt, B. Beichler, P. Danielis, F. Uster, C. Haubelt, and D. Timmermann. *MeNTor: A Wireless-Mesh-Network-Aware Data Dissemination Overlay based on BitTorrent*. Elsevier Ad Hoc Networks, Volume 79, pp. 146-159, Elsevier B. V., Amsterdam, The Netherlands, Oktober 2018
18. F. Grützmaker, B. Beichler, A. Hein, T. Kirste, and C. Haubelt. *Time and Memory Efficient Online Piecewise Linear Approximation of Sensor Signals*. Sensors 18(6), pp. 1672:1 – 1672:20, 2018.
19. C. Haubelt, K. Neubauer, T. Schaub, and P. Wanko. *Design Space Exploration with Answer Set Programming*. In KI - Künstliche Intelligenz, pp. 1 – 2, 2018.

20. S. Stieber, R. Dorsch, and C. Haubelt. *Accurate Sample Time Reconstruction of Inertial FIFO Data*. *Sensors* 17(12), pp. 2894:1 – 2894:15, 2017.
21. M. Geilen, J. Falk, C. Haubelt, T. Basten, B. Theelen, and S. Stuijk. *Performance Analysis of Weakly-Consistent Scenario-Aware Dataflow Graphs*. *The Journal of Signal Processing Systems* 87(1). pp. 157-175, 2017.
22. L. Middendorf and C. Haubelt. *A Programmable Graphics Processor based on Partial Stream Rewriting*. In *Computer Graphics Forum* 32(7), pp. 325-334, 2013.
23. J. Falk, C. Zebelein, C. Haubelt, and J. Teich. *A Rule-Based Quasi-Static Scheduling Approach for Static Islands in Dynamic Dataflow Graphs*. *ACM Transactions on Embedded Computing Systems* 12(3), pp. 74:1 – 74:31, 2013.
24. J. Gladigau, C. Haubelt, and J. Teich. *Model-Based Virtual Prototype Acceleration*. In *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems* 31(10), pp. 1572 – 1585, 2012.
25. R. Dorsch, R. K. Erickson, M. M. Helms, G. Crew, T. A. Gregg, W. Haileselassie, L. W. Helmer, A. Kohler, K. M. Pandey, S. Roscher, E. S. Rotter, C. Haubelt. *IBM Parallel Sysplex design for the IBM z196 system*. *IBM Journal of Research and Development* 56(1): 9, 2012.
26. J. Gladigau, A. Gerstlauer, C. Haubelt, M. Streubühr, and J. Teich. *Automatic System-Level Synthesis: From Formal Application Models to Generic Bus-Based MPSoCs*. In *Transactions on HiPEAC* 5(4), pp. 1-22, 2011.
27. J. Falk, C. Zebelein, J. Keinert, C. Haubelt, J. Teich and S. S. Bhattacharyya. *Analysis of SystemC Actor Networks for Efficient Synthesis*. In *ACM Transactions on Embedded Computing Systems*, 10(2):94–127, 2010.
28. A. Gerstlauer, C. Haubelt, A. D. Pimentel, T. P. Stefanov, D. D. Gajski and J. Teich. *Electronic System-Level Synthesis Methodologies*. In *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, 28(10), pp. 1517-1530, 2009.
29. J. Keinert, M. Streubühr, T. Schlichter, J. Falk, J. Gladigau, C. Haubelt, J. Teich and M. Meredith. *SYSTEMCODESIGNER - An Automatic ESL Synthesis Approach by Design Space Exploration and Behavioral Synthesis for Streaming Applications*. In *ACM Transactions on Design Automation of Electronic Systems*, 14(1), pp. 1-23, 2009.
30. T. Streichert, M. Glaß, C. Haubelt and J. Teich. *Design Space Exploration of Reliable Networked Embedded Systems*. In *Journal on Systems Architecture (JSA)*. Volume 53(10): 751-763, 2007.
31. F. Dittmann, F. Rammig, M. Streubühr, C. Haubelt, A. Schallenberg and W. Nebel. *Exploration, Partitioning and Simulation of Reconfigurable Systems*. it - Information Technology, <http://it-information-technology.de>, Oldenbourg Wissenschaftsverlag, vol. 49(3):149-156, 2007.
32. T. Streichert, C. Strengert, D. Koch, C. Haubelt and J. Teich. *Communication Aware Optimization of the Task Binding in Hardware/Software Reconfigurable Networks*. *Journal on Integrated Circuits and Systems*, Volume 2, Number 1, pp. 29-36, March 2007.
33. C. Haubelt, J. Falk, J. Keinert, T. Schlichter, M. Streubühr, A. Deyhle, A. Hadert and J. Teich. *A SystemC-based Design Methodology for Digital Signal Processing Systems*. In *EURASIP Journal on Embedded Systems*, Special Issue on Embedded Digital Signal Processing Systems, Volume 2007 (2007), Article ID 47580, 22 pages, March 2007.
34. T. Streichert, D. Koch, C. Haubelt and J. Teich. *Modeling and Design of Fault-Tolerant and Self-Adaptive Reconfigurable Networked Embedded Systems*. *EURASIP Journal on Embedded Systems*, Volume 2006 (2006), Article ID 42168, 15 pages, Hindawi Publishing Corporation.
35. C. Haubelt, T. Schlichter and J. Teich. *Improving Automatic Design Space Exploration by Integrating Symbolic Techniques into Multi-Objective Evolutionary Algorithms*. In *International Journal of Computational Intelligence Research (IJCIR)*, Special Issue on Multiobjective Optimization and Applications, Volume 2, Issue 3. pp. 239-254, 2006.

Patents:

1. D. K. N. Dechmann, F. Grützmacher, C. Haubelt, G. Heine, B. M. Keeves Von Wolf, E. Kühn, U. R. Müller, M. O. Quetting, B. Vorneweg, M. C. Wikelski, T. A. Wild. *Modulation des Verhaltens von Tieren*. European Patent Application EP000004369927A1, May 22 2024
2. D. K. N. Dechmann, F. Grützmacher, C. Haubelt, G. Heine, B. M. Keeves Von Wolf, E. Kühn, U. R. Müller, M. O. Quetting, B. Vorneweg, M. C. Wikelski, T. A. Wild. *Modulation of Animal Behaviour*. Australian Patent Application AU002022346153A1, Mar. 14 2024
3. D. K. N. Dechmann, F. Grützmacher, C. Haubelt, G. Heine, B. M. Keeves Von Wolf, E. Kühn, U. R. Müller, M. O. Quetting, B. Vorneweg, M. C. Wikelski, T. A. Wild. *Modulation of Animal Behaviour*. WIPO Patent Application WO002023041542A1, Mar. 23 2023

4. D. Gis, C. Haubelt, and N. Büscher. *Method for Checking, Evaluation, and/or Error Diagnosis of a Sensor System, Sensor System, and System*. United States Patent US000011589139B2, Feb. 21, 2023.
5. R. Dorsch and C. Haubelt. *Verfahren und Vorrichtung zur Erzeugung eines Nutzsignals aus einem Rohsignal*. Offenlegungsschrift DE102021207004A1, Jan. 05 2023.
6. D. Gis, C. Haubelt, and N. Büscher. *Method for Testing, Evaluation, and/or Error Diagnosis of a Sensor System, Sensor System, and System*. China Patent Application CN000114253831A, Mar. 29, 2022.
7. D. Gis, C. Haubelt, and N. Büscher. *Method for Checking, Evaluation, and/or Error Diagnosis of a Sensor System, Sensor System, and System*. United States Patent Application US020220095022A1, Mar. 24, 2022.
8. C. Haubelt, D. Gis, and N. Büscher. *Verfahren zur Überprüfung, Evaluation und/oder Fehlerdiagnose eines Sensorsystems, Sensorsystem und System*. Offenlegungsschrift DE102021200244A1, Mar. 24, 2022.
9. R. Dorsch, C. Haubelt, L. Middendorf, and S. Stieber. *Processing Control of a Sensor System*. United States Patent US000011263163B2, Mar. 1, 2022.
10. R. Dorsch, C. Haubelt, A. C. Strohrmann, and S. Stieber. *Verfahren zur Erkennung einer Doppelklickeingabe, elektrisches Gerät zur Erkennung einer Doppelklickeingabe*. Patentschrift DE102014225853B4, Jan. 13, 2022.
11. R. Dorsch, C. Haubelt, S. Stieber, D. Gis, N. Büscher. *Verfahren zum Verarbeiten der Sensorsignale einer Drehratensensoranordnung, Vorrichtung und Verfahren zum Betreiben der Vorrichtung*. Patentschrift DE102020205943B3, May 20, 2021.
12. A. Biewer, J. Gladigau, C. Haubelt, and D. Thoss. *Control Device for a Motor Vehicle*. United States Patent US000010657039B2, May 19, 2020.
13. R. Dorsch, C. Haubelt, L. Middendorf, and S. Stieber. *Processing Control of a Sensor System*. United States Patent Application US020200125523A1, Apr. 23, 2020.
14. R. Dorsch, C. Haubelt, S. Liu, and S. Stieber. *Method for Adjusting Time Stamps During the Acquisition of Sensor Data*. United States Patent US000010601571B2, Mar. 24, 2020.
15. R. Dorsch, C. Haubelt, L. Middendorf, and S. Stieber. *Processing Controller of Sensor System*. China Patent Application CN000110753907A, Feb. 2, 2020.
16. R. Dorsch, C. Haubelt, L. Middendorf, and S. Stieber. " ". Korea Patent Application KR102019126391A, Nov. 11, 2019.
17. A. Biewer, J. Gladigau, C. Haubelt, and D. Thoss. *Controlling Device for an Automobile*. TW000001651652B, Taiwan Patent, Feb. 21, 2019.
18. R. Dorsch, C. Haubelt, S. Liu, and S. Stieber. *Method for Adjusting Time Stamps During the Acquisition of Sensor Data*. China Patent Application CN000109286461A, Jan. 29, 2019.
19. R. Dorsch, C. Haubelt, S. Liu, and S. Stieber. *Method for Adjusting Time Stamps During the Acquisition of Sensor Data*. US Patent Application US020190028261A1, Jan. 24, 2019.
20. R. Dorsch, C. Haubelt, S. Liu, and S. Stieber. *Verfahren zum Anpassen von Zeitstempeln bei der Erfassung von Sensordaten*. Offenlegungsschrift DE102017212353A1, Jan. 24, 2019.
21. R. Dorsch, C. Haubelt, L. Middendorf, and S. Stieber. *Processing Control of a Sensor System*. Taiwan Patent Application TW000201839606A, Nov. 1, 2018.
22. R. Dorsch, C. Haubelt, L. Middendorf, and S. Stieber. *Verarbeitungssteuerung eines Sensorsystems*. Offenlegungsschrift DE102017204514A1, Sep. 20, 2018.
23. R. Dorsch, C. Haubelt, L. Middendorf, and S. Stieber. *Processing Controller of a Sensor System*. WIPO Patent Application WO2018/166698A1, Sep. 20, 2018.
24. A. Biewer, J. Gladigau, C. Haubelt, and D. Thoss. *Control Device for a Motor Vehicle*. European Patent EP000003077912B1, Aug. 08, 2018.
25. R. Dorsch, C. Haubelt, S. Stieber, and A. C. Strohrmann. *Methods for Detecting a Double-Click Input*. United States Patent US000010031611B2, Jul. 24, 2018.
26. D. Koch, T. Streichert, C. Haubelt and J. Teich. *Logic Chip, Logic System and Method for Designing a Logic Chip*. EP2188894B1, October 18, 2017.
27. A. Biewer, J. Gladigau, C. Haubelt, and D. Thoss. *Control Device for a Motor Vehicle*. US Patent Application US020160299839A1, Oct. 13, 2016.
28. A. Biewer, J. Gladigau, C. Haubelt, and D. Thoss. *Control Device for a Motor Vehicle*. European Patent Application EP000003077912A1, Oct. 12, 2016.
29. A. Biewer, J. Gladigau, C. Haubelt, and D. Thoss. *Control Device for a Motor Vehicle*. South Korea Patent Application KR102016093621A, Aug. 08, 2016.
30. A. Biewer, J. Gladigau, C. Haubelt, and D. Thoss. *Control Device for a Motor Vehicle*. China Patent Application CN000105765541A, Jul. 13, 2016.

31. A. C. Strohrmann, C. Haubelt, R. Dorsch, and S. Stieber. *Methods for Detecting a Double-Click Input*. China Patent Application CN000105739755A, Jul. 06, 2016.
32. R. Bichler, T. Claus, R. Dorsch, C. Haubelt, and L. Middendorf. *Apparatus and Method for Calibration and Self-Test of Inertial Sensors*. South Korea Patent Application KR102016072055A, Jun. 22, 2016.
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3. J. Heller, P. Wilsdorf, C. Niemann, F. Plocksties, A. Uhrmacher, C. Haubelt, and D. Timmermann, *Assisting Early Design Decision For Implantable Neurostimulators Through Virtual Prototyping*. In: Progress in Electrically Active Implants - Tissue and Functional Regeneration, Rostock, Deutschland, September 2020.
4. F. Plocksties, C. Niemann, J. Heller, C. Haubelt, and D. Timmermann. *Towards an Energy Autonomous Implant for Closed-loop Neurostimulation*. In: Progress in Electrically Active Implants - Tissue and Functional Regeneration, Rostock, Deutschland, September 2020.
5. J.-P. Wolff, F. Grützmacher, R. Dorsch, R. Kaack, L. Middendorf, and C. Haubelt. *Towards Automated Prototyping of Gesture Recognition Systems for Wearable Devices using Inertial Sensors*. In Proceedings of Smart Systems Integration, Barcelona, Spain, pp. 85-92, April, 2019. (Best Paper Award Nominee)
6. N. Büscher, M. Stieringer, and C. Haubelt, *Evaluation Method for the absolute Orientation from the Rotation Vector on Mobile Devices*. In Proceedings of the IEEE International Symposium on Inertial Sensors and Systems (INERTIAL), Naples, Florida, USA, pp. 179-183, April, 2019.
7. M. Geilen, J. Falk, C. Haubelt, T. Basten, B. Theelen, S. Stuijk. *Performance Analysis of Weakly-Consistent Scenario-Aware Dataflow Graphs*. In Proceeding of the Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, CA, U.S.A., pp. 393-397, 2014.
8. C. Haubelt, F. Ludwig, L. Middendorf, and C. Zebelein. *Using Stream Rewriting for Mapping and Scheduling Data Flow Graphs onto Many-Core Architectures*. In Proceeding of the Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, CA, U.S.A., pp. 1431-1435, 2013.
9. P. Kutzer, M. Streubühr, C. Haubelt, J. Teich and A. von Schwerin. *Actor-oriented Modeling of Industrial Ethernet in the Automation Domain Using SystemC*. Proceedings of the Embedded World Conference, Nuremberg, Germany, 2011.
10. M. Streubühr, M. Jäntschi, C. Haubelt and J. Teich. *From Model-based Design to Virtual Prototypes for Automotive Applications*. In Proceedings of the Embedded World Conference, Nuremberg, Germany, March 03-05, 2009.
11. A. Schneider, G. Bunin, C. Haubelt and U. Heinkel. *Automatic Test Generation with Model Checking Techniques*. In Software Quality in Service-Oriented Architectures Proceedings of the Conference on Quality Engineering in Software Technology (CONQUEST2006). Berlin, Germany, pp. 307 - 318, September 27-29, 2006.
12. T. Dinkel, C. Haubelt, U. Heinkel, J. Knäblein, T. Schlichter, S. Schock and J. Teich. *Comparison of Techniques for the Automatic Verification of ADeVA Specifications*. In

Dresdener Arbeitstagung Schaltungs- und Systementwurf (DASS 2005). Dresden, Germany, April 13-14, 2005.

13. C. Haubelt and J. Teich. *Modeling and Analysis of Distributed Reconfigurable Hardware*. In Dresdener Arbeitstagung Schaltungs- und Systementwurf (DASS 2004), pp. 106-111, Dresden, Germany, April 19-20, 2004.
14. M. Jersak, K. Richter, D. Ziegenbein, R. Ernst, C. Haubelt, F. Slomka and J. Teich. *SPI-Workbench für die Analyse eingebetteter Systeme*. Workshop: Modelle, Werkzeuge und Infrastrukturen zur Unterstützung von Entwicklungsprozessen, Aachen, Germany, March 20-22, 2002.

Invited Talks:

1. C. Haubelt, S. Spors. *Interdisziplinäre Intelligenz: Herausforderungen und Lösungen für smarte Implantate*, at Tag der KI, February 26th 2025, Rostock, Germany
2. K. Neubauer, P. Wanko, T. Schaub, and C. Haubelt. *Application Mapping and Scheduling through ASPmT with Partial Assignment Evaluation*, at the 20th International Workshop on Software and Compilers for Embedded Systems (SCOPES'17), June 15 Sankt Goar, Germany, 2017.
3. C. Haubelt, *Designing Embedded MEMS-Based Activity Recognition Systems*, at the 3rd international Workshop on Sensor-based Activity Recognition and Interaction (iWOAR'16), June 24, Rostock, Germany, 2016.
4. F. Grützmaker, B. Beichler, B. Theelen, and C. Haubelt. *Performance Estimation of Template-based Gesture Recognition on Multi-Core Architectures Using Scenario-Aware Dataflow Graphs*. At Integrating Dataflow, Embedded computing and Architecture (IDEA'2016) Workshop. April 11, Vienna, Austria, 2016.
5. C. Haubelt: *Gesture Detection On-Loading for the Next Generation Sensor Subsystems*. At TISU: Transfer to Industry and Start-Ups, January 19, Prague, Czech Republic, 2016.
6. C. Haubelt. *A Novel Task Mapping Approach Based on Stream Rewriting*. Invited Talk at KTH Stockholm, December 5, Stockholm, Sweden, 2014.
7. A. Nitsch, B. Beichler, F. Golatowski, and C. Haubelt. *Towards a Model-based Design for ETCS Speed and Distance Monitoring*. At Internationale Fachmesse für Verkehrstechnik - Innovative Komponenten, Fahrzeuge, Systeme (InnoTrans 2014), September 24, Berlin, Germany, 2014.
8. C. Haubelt. *A Novel Task Mapping Approach Based on Stream Rewriting*. Invited Talk at Eindhoven Technical University, October 24, Eindhoven, The Netherlands, 2013.
9. R. Kiesel, O. Löhlein, M. Streubühr, J. Teich, and C. Haubelt. *SystemC-based Actor-oriented Modeling of an Automotive Pedestrian Detection System*. At 24. European SystemC User's Group Meeting, September 13, Oldenburg, Germany 2011.
10. C. Haubelt. *Synthesis and Optimization of Heterogeneous Multi-Core Systems*. Invited Talk at Eindhoven Technical University, December 9, Eindhoven, The Netherlands, 2010.
11. C. Haubelt. *Accelerated Design Space Exploration for Heterogeneous MPSoCs Using Symbolic Techniques*. At ARTIST Design Map2MPSoC 2010 Workshop, June 29, St. Goar, Germany, 2010.
12. C. Haubelt. *ESL Synthesis Across Hardware/Software Boundaries*. Invited Talk at the Workshop on Compiler-Assisted System-On-Chip Assembly (CASA'09), Embedded Systems Week 2009, October 10, Grenoble, France, 2009.
13. C. Haubelt. *SystemCoDesigner: An ESL Synthesis Methodology*. DATE'09 Friday Workshop: The Future of ESL Synthesis, Nice, France, 2009. Invited Talk.
14. M. Streubühr, C. Haubelt and J. Teich. *System Level Performance Simulation for Heterogenous Multi-Processor Architectures*. 1st Workshop on Rapid Simulation and Performance Evaluation: Methods and Tools (RAPIDO), in conjunction with the 4th HiPEAC Conference, Paphos, Cyprus, January 25, 2009.
15. C. Haubelt. *An Actor-Oriented Design Methodology Using SystemC*. Invited talk at IBM Future Technology Forum, Böblingen, Germany, December 12, 2008.
16. C. Haubelt. *SystemCoDesigner - Map2MPSoC 2008*. Invited talk at ARTIST Design Map2MPSoC 2008 Workshop, Düsseldorf, Germany, November 28, 2008.
17. C. Haubelt. *SystemCoDesigner - A Methodology for an Early Assessment of Design Options*. Invited talk at the Fraunhofer Institut für Integrierte Schaltungen (FhG-IIS), Erlangen, Germany, November 25, 2008.
18. C. Haubelt, J. Falk, C. Zebelein, J. Keinert, J. Teich and S. Bhattacharyya. *SystemCoDesigner - An ESL Design Methodology Based on the FunState MoC*. Talk at 2nd

- Artist Workshop on Models of Computation and Communication, Eindhoven, The Netherlands, July 3, 2008.
19. C. Haubelt. *SystemCoDesigner: Automatic Design Space Exploration and Rapid Prototyping from Behavioral Models*. Talk at Center of Embedded Computer Systems, Irvine, CA, USA, June 13, 2008.
 20. C. Haubelt. *SystemCoDesigner - A Methodology for an Early Assessment of Design Options*. Invited Talk at the 1. ILP-Summit Embedded Systems Institute, Nuremberg, Germany, February 27, 2008.
 21. C. Haubelt. *Substantiating Early Design Decisions by Automatic Design Space Exploration*. Invited Talk at TU Chemnitz. December 12, Chemnitz, Germany, 2007.
 22. J. Falk, J. Gladigau, C. Haubelt, J. Keinert, T. Schlichter, M. Streubühr and J. Teich. *Substantiating Early Design Decisions by Automatic Design Space Exploration*. Talk at 16. European SystemC Users Group Meeting, September 18, Barcelona, Spain, 2007.
 23. J. Falk, J. Gladigau, C. Haubelt and J. Teich. *SysteMoC - Verification and Refinement of Actor-Based Models of Computation*. Talk, ARTIST2 Workshop on MoCC - Models of Computation and Communication, November 16-17, Zurich, Switzerland, 2006.
 24. C. Haubelt. *SystemCoDesigner - Eine Entwurfsmethodik für SystemC-Beschreibungen*. Invited Talk, Siemens Medical Solutions, July 17, Erlangen, Germany, 2006.
 25. C. Haubelt. *SystemCoDesigner - Eine Entwurfsmethodik für SystemC-Beschreibungen*. Invited talk, Institute of Computer and Communication Network Engineering, TU Braunschweig, April 28, Braunschweig, Germany, 2006.
 26. C. Haubelt. *SystemCoDesigner - Eine Entwurfsmethodik für SystemC-Beschreibungen*. Invited Talk, Oldenburger Forschungs- und Entwicklungsinstitut für Informatik-Werkzeuge und Systeme OFFIS, April 24, Oldenburg, Germany, 2006.
 27. J. Teich, C. Haubelt, D. Koch and T. Streichert. *Concepts for Self-Adaptive Automotive Control Architectures*. DATE'06 Friday Workshop Future Trends in Automotive Electronics and Tool Integration, Conference Design Automation and Test in Europe, March 10, 2006, Munich, Germany.
 28. C. Haubelt. *Eine modellbasierte Entwurfsmethodik für SystemC*. Invited talk, Professur Schaltkreis- und Systementwurf, TU Chemnitz, February 1, Chemnitz, Germany, 2006.
 29. C. Haubelt. *SystemCoDesigner: Entwurfsraumexploration für SystemC-Beschreibungen*. Invited Talk, Fraunhofer Institut für Integrierte Schaltungen (FhG-IIS), December 12, Erlangen, Germany, 2005.
 30. C. Haubelt. *A System-Level Approach to Automated Model-Based Design Space Exploration*. Invited Talk at the Computer Engineering and Networks Laboratory (TIK), ETH Zurich, March 31, Zurich, Switzerland, 2005.
 31. C. Haubelt. *Introduction to Hardware-Software-Co-Design*. Invited Talk, Fraunhofer Institut für Integrierte Schaltungen (FhG-IIS), May 03, Erlangen, Germany, 2004.
 32. C. Haubelt. *Hierarchische Mehrzieloptimierung Eingebetteter Systeme*. Invited Talk, Oldenburger Forschungs- und Entwicklungsinstitut für Informatik-Werkzeuge und Systeme OFFIS, September 16, Oldenburg, Germany, 2003.

Tutorials:

1. C. Haubelt. *Entwurf und virtuelles Prototyping*. Kompaktkurs "Eingebettete Systeme", May 7th, Rostock, Germany, 2014.
2. C. Haubelt. *Integrated Finite State Machine and Dataflow Modeling*. Lecture at the Summer School on Models for Embedded Signal Processing Systems, September 2nd, Leiden, The Netherlands, 2010.
3. C. Haubelt. *Designing Heterogeneous MPSoCs*. DAC'10 Friday Tutorial "SystemC for Holistic System Design with Digital Hardware, Analog Hardware, and Software". June 18th, Anaheim, CA, U.S.A., 2010.
4. C. Haubelt. *Designing Multi-Processor Systems-on-Chip*. Embedded Tutorial at the 22nd International SoC Conference. September 10th, Belfast, Northern Ireland, UK, 2009.
5. J. Teich and C. Haubelt. *Principles: Analysis, Optimization and Exploration*. DATE'09 Monday Tutorial: System-Level Modeling, Analysis and Synthesis of Embedded Multi-Core Designs, Nice, France, 2009. Invited Talk.
6. C. Haubelt. *Practice: ESL Case Studies (Motion-JPEG Example)*. DATE'09 Monday Tutorial: System-Level Modeling, Analysis and Synthesis of Embedded Multi-Core Designs, Nice, France, 2009. Invited Talk.

7. C. Haubelt and B. Niemann. *Formalizing and Verifying SystemC TLMs*. Talk at FDL Industrial Workshop on Verification of Complex Systems, September 19, Barcelona, Spain, 2007.
 8. C. Haubelt. *Hardware-Software-Partitioning with SystemC*. In Master Course Modern Design Techniques with SystemC at the Design, Automation and Test in Europe (DATE'04), February 20, Paris, France, 2004.
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