

Dr.rer.nat. Bastian Schlich



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Personal

I worked at the Embedded Software Laboratory from April 2004 until February 2010, first as a PhD student and then as a postdoc. As a postdoc, I was leading the Formal Verification group. My main research interest was in formal verification of software for embedded systems. The group applies different formal verification techniques such as static analysis, abstract interpretation, and model checking to embedded software.

The group develops a tool for the analysis of assembly code for microcontrollers and instruction list programs for PLCs. The tool is called [\[mc\]square](#). In the tool, different formal methods such as model checking, abstract interpretation, and static analysis are applied and adapted to the specifics of embedded systems software. The main focus is the application of theoretical results to real problems. The tool should be user-friendly and easy to handle and should not require changes of the program to be analyzed.

In a second project, a static analyzer for C code is developed, which aims at supporting the development of embedded software according to the upcoming ISO 26262. It will be implemented as a plugin for the Eclipse development platform. Later, it will be implemented as a plugin for the Microsoft Visual Studio development platform.

I received my Doctoral degree in June 2008 from the RWTH Aachen University. The title of my Dissertation thesis is "Model Checking of Software for Microcontrollers". I wrote my Diploma thesis at the chair of Software-Technology, University of Dortmund. The topic of the thesis is "Konzeption und Realisierung eines Werkzeugs zur Unterstützung des Test-Driven-Developments".

Publications

[BSK+15]

PDFBIB

Biallas, S., Simon, H., Kowalewski, S., Hauck-Stattelmann, S., and Schlich, B., "Automatische Testfallgenerierung für SPS-Programme mittels Zeilenüberdeckung"Düsseldorf: VDI, 2015, vol. 2258,2, pp. 95-106.

Automatische Testfallgenerierung für SPS-Programme mittels Zeilenüberdeckung

Bibtex entry :

```
@inbook { BSK+15,  
  author = { Biallas, Sebastian and Simon, Hendrik and Kowalewski,  
Stefan  
  and Hauck-Stattelmann, Stefan and Schlich, Bastian },  
  title = { Automatische Testfallgenerierung f{"u}r SPS-Programme  
mittels Zeilen{"u}berdeckung },  
  booktitle = { Automation 2015 : benefits of change - the future of  
automation ; 16. Branchentreff der Mess- und  
Automatisierungstechnik ; Kongresshaus Baden-Baden, 11. und  
12. Juni 2015 / VDI/VDE-Gesellschaft Mess- und  
Automatisierungstechnik. - Bd. 1 },  
  publisher = { VDI },  
  pages = { 95-106 },  
  volume = { 2258,2 },  
  series = { VDI-Berichte },  
  year = { 2015 },  
  address = { D{"u}sseldorf },  
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Automatisierungstechnik  
Automation 2015, Baden-Baden (Germany), 2015-06-11 -  
2015-06-12 },  
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}
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[HBS+15]

PDFBIB

Hauck-Stattelmann, S., Biallas, S., Schlich, B., Kowalewski, S., and Jetley, R., "Analyzing the Restart Behavior of Industrial Control Applications"Springer International Publishing: Cham, 2015, vol. 9109, pp. 585-588.

Analyzing the Restart Behavior of Industrial Control Applications

Bibtex entry :

```
@inbook { HBS+15,
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```

author = { Hauck-Stattelmann, Stefan and Biallas, Sebastian and
           Schlich, Bastian and Kowalewski, Stefan and Jetley, Raoul },
title = { Analyzing the Restart Behavior of Industrial Control
           Applications },
booktitle = { FM 2015: formal methods : 20th international
             symposium,
              Oslo, Norway, June 24 - 26, 2015 ; proceedings / Nikolaj
              Bjørner; Frank de Boer (eds.) },
publisher = { Cham },
pages = { 585-588 },
volume = { 9109 },
series = { Lecture Notes in Computer Science },
year = { 2015 },
address = { Springer International Publishing },
organization = { 20th International Symposium Formal Methods, Oslo
                (Norway),
                2015-06-24 - 2015-06-26 },
doi = { 10.1007/978-3-319-19249-9_38 },
typ = { PUB:(DE-HGF)8 },
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[SFB+15]

[PDFBIB](#)

Simon, H., Friedrich, N., Biallas, S., Hauck-Stattelmann, S., Schlich, B., and Kowalewski, S., "Automatic test case generation for PLC programs using coverage metrics", in *Proc. 2015 IEEE 20th Conference on Emerging Technologies & Factory Automation (ETFA) : 8 - 11 Sept. 2015, City of Luxembourg, Luxembourg / co-sponsored by IEEE ...*, Piscataway, NJ, 2015, IEEE, p. 4.

Automatic test case generation for PLC programs using coverage metrics

Bibtex entry :

```

@inproceedings { SFB+15,
  author = { Simon, Hendrik and Friedrich, Nico and Biallas,
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  title = { Automatic test case generation for PLC programs using
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[BKS+14]

[PDFBIB](#)

Biallas, S., Kowalewski, S., Stattelmann, S., and Schlich, B., "Efficient Handling of States in Abstract Interpretation of Industrial Programmable Logic Controller Code", in *Proc. Discrete Event Systems : [Proc. Proceedings of the 12th International Workshop on Discrete Event Systems, Cachan, France, 2014] / Conference Editor: Lesage, Jean-Jacques, Faure, Jean-Marc, Cury, Jose E. R., Lennartson, Bengt*, Cachan, France, 2014, IFAC, pp. 400-405.

Efficient Handling of States in Abstract Interpretation of Industrial Programmable Logic Controller Code

Bibtex entry :

```
@inproceedings { BKS+14,
author = { Biallas, Sebastian and Kowalewski, Stefan and
Stattelmann,
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title = { Efficient Handling of States in Abstract Interpretation
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Industrial Programmable Logic Controller Code },
booktitle = { Discrete Event Systems : [Proc. Proceedings of the
12th
International Workshop on Discrete Event Systems, Cachan,
France, 2014] / Conference Editor: Lesage, Jean-Jacques,
Faure, Jean-Marc, Cury, Jose E. R., Lennartson, Bengt },
publisher = { IFAC },
pages = { 400-405 },
year = { 2014 },
address = { Cachan, France },
doi = { 10.3182/20140514-3-FR-4046.00065 },
typ = { PUB:(DE-HGF)8 },
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[SKB+14]

[PDFBIB](#)

Stattelmann, S., Kowalewski, S., Biallas, S., and Schlich, B., "Applying Static Code Analysis on

Industrial Controller Code", in *Proc. 2014 IEEE [International Conference on] Emerging Technologies and Factory Automation (ETFA 2014) : Barcelona, Spain, 16 - 19 September 2014 / [co-sponsored by Universitat Politècnica de Catalunya - Barcelona Tech (UPC); IEEE Industrial Electronics Society]*, Piscataway, NJ, 2014, IEEE, p. 4.

Applying Static Code Analysis on Industrial Controller Code

Bibtex entry :

```
@inproceedings { SKB+14,
  author = { Stattelmann, Stefan and Kowalewski, Stefan and Biallas,
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    Industrial Electronics Society] },
  publisher = { IEEE },
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  year = { 2014 },
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[BKK+13]

[PDFBIB](#)

Biallas, S., Kamin, V., Kowalewski, S., Schlich, B., Sehestedt, S., and Stattelmann, S., "Verifikation von sicherheitsgerichteten SPS-Programmen mit Hilfe von Safety-Automaten" Düsseldorf: VDI-Verl., 2013, vol. 2209, pp. 75-79.

Verifikation von sicherheitsgerichteten SPS-Programmen mit Hilfe von Safety-Automaten

Bibtex entry :

```
@inbook { BKK+13,
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Stefan },
title = { Verifikation von sicherheitsgerichteten SPS-Programmen
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Automatisierungstechnik ; Kongresshaus Baden-Baden, 25. und
26. Juni 2013 / VDI/VDE-Gesellschaft Mess- und
Automatisierungstechnik },
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[BKS12]

[PDFBIB](#)

Biallas, S., Kowalewski, S., and Schlich, B., "Automatische Wertebereichsanalyse von SPS-Programmen", in *Proc. Automation 2012 : der 13. Branchentreff der Mess- und Automatisierungstechnik / VDI/VDE-Gesellschaft Mess- und Automatisierungstechnik ; Kongress 'Automation 2012' ; 13 (Baden-Baden) ; 2011.06.13-14 Branchentreff der Mess- und Automatisierungstechnik*, Düsseldorf, 2012 in VDI-Berichte, VDI-Verl., pp. 79-83.

Automatische Wertebereichsanalyse von SPS-Programmen

Bibtex entry :

```
@inproceedings { BKS12,
author = { Biallas, Sebastian and Kowalewski, Stefan and Schlich,
Bastian },
title = { Automatische Wertebereichsanalyse von SPS-Programmen },
booktitle = { Automation 2012 : der 13. Branchentreff der Mess- und
Automatisierungstechnik / VDI/VDE-Gesellschaft Mess- und
Automatisierungstechnik ; Kongress 'Automation 2012' ; 13
(Baden-Baden) ; 2011.06.13-14 Branchentreff der Mess- und
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publisher = { VDI-Verl. },
pages = { 79-83 },
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url = { http://publications.rwth-aachen.de/record/120638 },
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[BKS12a]

[PDFBIB](#)

Biallas, S., Kowalewski, S., and Schlich, B., "Automatische Wertebereichsanalyse -- Formale Verifikation für SPS-Programme", *Automatisierungstechnische Praxis : atp*, vol. 54, iss. 7/8, pp. 68-74, 2012

Automatische Wertebereichsanalyse -- Formale Verifikation für SPS-Programme

Bibtex entry :

```
@article { BKS12a,
  author = { Biallas, Sebastian and Kowalewski, Stefan and Schlich,
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  pages = { 68-74 },
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[BKS12b]

[PDFBIB](#)

Biallas, S., Kowalewski, S., and Schlich, B., "Range and Value-Set Analysis for Programmable Logic Controllers", in *Proc. Proceedings of the 11th International Workshop on Discrete Event Systems*, Guadalajara, Mexico, 2012, IFAC, pp. 378-383.

Range and Value-Set Analysis for Programmable Logic Controllers

Bibtex entry :

```
@inproceedings { BKS12b,
  author = { Biallas, Sebastian and Kowalewski, Stefan and Schlich,
    Bastian },
  title = { Range and Value-Set Analysis for Programmable Logic
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  booktitle = { Proceedings of the 11th International Workshop on
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Discrete
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publisher = { IFAC },
pages = { 378-383 },
year = { 2012 },
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url = { http://publications.rwth-aachen.de/record/752302 },
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```

[BSK12]

[PDFBIB](#)

Brauer, J., Schlich, B., and Kowalewski, S., "Parallel and distributed invariant checking of microcontroller software", *Electronic notes in theoretical computer science : ENTCS*, vol. 287, pp. 45-63, 2012

Parallel and distributed invariant checking of microcontroller software

Bibtex entry :

```
@article { BSK12,
  author = { Brauer, J{o}rg and Schlich, Bastian and Kowalewski, Stefan },
  title = { Parallel and distributed invariant checking of microcontroller software },
  journal = { Electronic notes in theoretical computer science : ENTCS },
  publisher = { Elsevier Science },
  pages = { 45-63 },
  volume = { 287 },
  year = { 2012 },
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[BBK+11]

[PDFBIB](#)

Biallas, S., Brauer, J., Kowalewski, S., and Schlich, B., "Automatically Deriving Symbolic Invariants for PLC Programs Written in IL", in *Proc. Formal methods for automation and safety in railway and automotive systems : FORMS/FORMAT 2010 ; [8th symposium ; proceedings] / Eckehard Schnieder; Géza Tarnai, eds.*, Heidelberg [u.a.], 2011, Springer, pp. 237-245.

Automatically Deriving Symbolic Invariants for PLC Programs Written in IL

Bibtex entry :

```
@inproceedings { BBK+11,
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  title = { Automatically Deriving Symbolic Invariants for PLC
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  booktitle = { Formal methods for automation and safety in railway
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    proceedings] / Eckehard Schnieder; Géza Tarnai, eds. },
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  pages = { 237-245 },
  year = { 2011 },
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```

[BKS11]

[PDFBIB](#)

Biallas, S., Kowalewski, S., and Schlich, B., "Leistungsfähige Verifikation von industriellen SPS-Programmen mittels Model-Checking und statischer Analyse", in *Proc. 'Zukunft verantwortungsvoll gestalten' : Automation 2011 ; der 12. Branchentreff der Mess- und Automatisierungstechnik ; Kongress Baden-Baden, 28. und 29. Juni 2011 / VDI/VDE-Gesellschaft Mess- und Automatisierungstechnik. [Kongressleiter: Peter Adolphs ...]*, Düsseldorf, 2011 in VDI-Berichte, VDI-Verl., pp. 67-72.

Leistungsfähige Verifikation von industriellen SPS-Programmen mittels Model-Checking und statischer Analyse

Bibtex entry :

```
@inproceedings { BKS11,
  author = { Biallas, Sebastian and Kowalewski, Stefan and Schlich,
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    ; Kongress Baden-Baden, 28. und 29. Juni 2011 /  
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    url = { http://publications.rwth-aachen.de/record/118212 },  
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```

[RHS+11]

[PDFBIB](#)

Reinbacher, T., Horauer, M., Schlich, B., Brauer, J., and Scheuer, F., "Model checking embedded software of an industrial knitting machine", *International journal of information technology, communications and convergence*, vol. 1, iss. 2, pp. 186-205, 2011

Model checking embedded software of an industrial knitting machine

Bibtex entry :

```
@article { RHS+11,  
    author = { Reinbacher, Thomas and Horauer, Martin and Schlich,  
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    title = { Model checking embedded software of an industrial  
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    publisher = { Inderscience Publishers },  
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}
```

[SBK11]

[PDFBIB](#)

Schlich, B., Brauer, J., and Kowalewski, S., "Application of Static Analyses for State-Space Reduction to the Microcontroller Binary Code", *Science of computer programming*, vol. 76, iss. 2, pp. 100-118, 2011

Application of Static Analyses for State-Space Reduction to the Microcontroller Binary Code

Bibtex entry :

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@article { SBK11,
  author = { Schlich, Bastian and Brauer, J{"o}rg and Kowalewski,
Stefan },
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to
  the Microcontroller Binary Code },
  journal = { Science of computer programming },
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  pages = { 100-118 },
  volume = { 76 },
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[SNB+11]

[PDFBIB](#)

Schlich, B., Noll, T., Brauer, J., and Brutschy, L., "Reduction of Interrupt Handler Executions for Model Checking Embedded Software", in *Proc. Hardware and software: verification and testing : 5th International Haifa Verification Conference, HCV 2009, Haifa, Israel, October 19-22, 2009 : revised selected papers / Kedar Namjoshi ... (eds.)*, Heidelberg [u.a.], 2011 in Lecture Notes in Computer Science, Springer.

Reduction of Interrupt Handler Executions for Model Checking Embedded Software

Bibtex entry :

```
@inproceedings { SNB+11,
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International Haifa Verification Conference, HCV 2009,
Haifa, Israel, October 19-22, 2009 : revised selected papers
/ Kedar Namjoshi ... (eds.) },
publisher = { Springer },
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[BFK+10]

[PDFBIB](#)

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Bibtex entry :

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@inproceedings { BFK+10,
  author = { Biallas, Sebastian and Frey, Georg and Kowalewski,
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  title = { Formale Verifikation von Sicherheits-Funktionsbausteinen
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;
  Beschreibungsmittel, Methoden, Werkzeuge und Anwendungen ;
  11. Fachtagung mit Tutorium, 25. bis 27. Mai 2010 in
  Magdeburg, Denkfabrik im Wissenschaftshafen / ifak, Institut
  f{"u}r Automation und Kommunikation e.V., Magdeburg;
  Otto-von-Guericke-Universit{"a}t Magdeburg, Institut
  f{"u}r Automatisierungstechnik. [Hrsg.: Ulrich Jumar,
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  publisher = { ifak },
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url = { http://publications.rwth-aachen.de/record/118924 },
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[BNS10]

[PDFBIB](#)

Brauer, J., Noll, T., and Schlich, B., "Interval Analysis of Microcontroller Code using Abstract Interpretation of Hardware and Software", in *Proc. SCOPES '10 Proceedings of the 13th International Workshop on Software & Compilers for Embedded Systems : St. Goar, Germany - June 29-30, 2010*, New York, NY, 2010 in ACM Digital Library, ACM.

Interval Analysis of Microcontroller Code using Abstract Interpretation of Hardware and Software

Bibtex entry :

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@inproceedings { BNS10,
  author = { Brauer, J{\o}rg and Noll, Thomas and Schlich, Bastian
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Workshop on
Software & Compilers for Embedded Systems : St. Goar,
Germany - June 29-30, 2010 },
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[GSB+10]

[PDFBIB](#)

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Synthesizing Simulators for Model Checking Microcontroller Binary

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@inproceedings { GSB+10,  
  author = { G{"u}ckel, Dominique and Schlich, Bastian and Brauer,  
            J{"o}rg and Kowalewski, Stefan },  
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Microcontroller  
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Diagnostics of Electronic Circuits and Systems : April  
14–16, 2010, Vienna, Austria / Sponsored by IEEE Computer  
Society, Test Technology Techn. Council, In coop. with Dept.  
of Computer Engineering, Fac. of Informatics, Vienna Univ.  
of Techn. },  
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  author = { Reinbacher, Thomas and Horauer, Martin and Schlich,  
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  author = { Schlich, Bastian },
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},
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  author = { Brauer, J{\\"o}rg and Huuck, Ralf and Schlich, Bastian },  
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  journal = { Electronic notes in theoretical computer science :  
ENTCS },  
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Thomas  
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  booktitle = { SOFSEM 2009: theory and practice of computer science
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year = { 2009 },
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url = { http://publications.rwth-aachen.de/record/99559 },
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    [10. Branchentreff der Mess- und Automatisierungstechnik] /
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[BKK+08]

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international  
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  proceedings / Egon B{"o}rger ... (eds.) },  
  publisher = { Springer },  
  pages = { 112-124 },  
  volume = { 5238 },  
  series = { Lecture Notes in Computer Science },  
  year = { 2008 },  
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  author = { Herberich, Gerlind and Schlich, Bastian and Weise,  
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  author = { Noll, Thomas and Schlich, Bastian },  
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Yorav (ed.) },  
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  series = { Lecture notes in computer science },  
  year = { 2008 },  
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[RKH+08]

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  Martin  
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[RKH+08a]

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  url = { http://publications.rwth-aachen.de/record/99569 },  
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  author = { Schlich, Bastian },  
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  title = { Model checking of software for microcontrollers },  
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  pages = { IV, 159 S. : graph. Darst. },  
  series = { Aachener Informatik-Berichte },  
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[SGK08]

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  author = { Schlich, Bastian and G{"u}ckel, Dominique and  
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[SK07d]

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Schlich, B. and Kowalewski, S., "An extendable architecture for model checking hardware-specific automotive microcontroller code", in *Proc. FORMS/FORMAT 2007 - 6th symposium : formal methods for automation and safety in railway and automotive systems ; proceedings of Symposium FORMS/FORMAT 2007, Braunschweig, Germany, 25th and 26th January, 2007 / Eckehard Schnieder; Géza Tarnai (Eds.)*, Braunschweig, 2007, GZVB, pp. 202-212.

An extendable architecture for model checking hardware-specific automotive microcontroller code

Bibtex entry :

```

@inproceedings { SK07d,
author = { Schlich, Bastian and Kowalewski, Stefan },
title = { An extendable architecture for model checking
hardware-specific automotive microcontroller code },
booktitle = { FORMS/FORMAT 2007 - 6th symposium : formal methods
for
    automation and safety in railway and automotive systems ;
proceedings of Symposium FORMS/FORMAT 2007, Braunschweig,
Germany, 25th and 26th January, 2007 / Eckehard Schnieder;
Géza Tarnai (Eds.) },
publisher = { GZVB },
pages = { 202-212 },
year = { 2007 },
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url = { http://publications.rwth-aachen.de/record/117067 },  
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[SSK07]

[PDFBIB](#)

Schlich, B., Salewski, F., and Kowalewski, S., "Applying model checking to an automotive microcontroller application", in *Proc. 2007 International Symposium on Industrial Embedded Systems : Costa da Caparica, [Lisbon], Portugal, 4 - 6 July 2007 ; [SIES'2007] / IEEE / IEEE Computer Society Press, Piscataway, NJ, 2007, IEEE, pp. 209-216.*

Applying model checking to an automotive microcontroller application

Bibtex entry :

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@inproceedings { SSK07,  
  author = { Schlich, Bastian and Salewski, Falk and Kowalewski,  
Stefan },  
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  booktitle = { 2007 International Symposium on Industrial Embedded  
Systems  
: Costa da Caparica, [Lisbon], Portugal, 4 - 6 July 2007 ;  
[SIES'2007] / IEEE / IEEE Computer Society Press },  
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  url = { http://publications.rwth-aachen.de/record/117071 },  
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[PSK06]

[PDFBIB](#)

Palczynski, J., Schlich, B., and Kowalewski, S., "Eine Evaluationssuite zur schnellen Bewertung von Matlab/Simulink-Modelcheckern", in *Proc. Informatik 2006 : Informatik für Menschen ; Beiträge der 36. Jahrestagung der Gesellschaft für Informatik e.V. (GI) ; 2. bis 6. Oktober 2006 in Dresden / Christian Hochberger ... (Hrsg.). - T. 1. - 1, Bonn, 2006 in GI-Edition : Proceedings, Ges. für Informatik, pp. 751-755.*

Eine Evaluationssuite zur schnellen Bewertung von Matlab/Simulink-Modelcheckern

Bibtex entry :

```
@inproceedings { PSK06,
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author = { Palczynski, Jacob and Schlich, Bastian and Kowalewski,
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          Matlab/Simulink-Modelcheckern },
booktitle = { Informatik 2006 : Informatik f{"u}r Menschen ;
Beitr{"a}ge
              der 36. Jahrestagung der Gesellschaft f{"u}r Informatik
              e.V. (GI) ; 2. bis 6. Oktober 2006 in Dresden / Christian
              Hochberger ... (Hrsg.). - T. 1. - 1 },
publisher = { Ges. f{"u}r Informatik },
pages = { 751-755 },
series = { GI-Edition : Proceedings },
year = { 2006 },
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url = { http://publications.rwth-aachen.de/record/111754 },
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[SK06a]

[PDFBIB](#)

Schlich, B. and Kowalewski, S., "[mc]square: A model checker for microcontroller code", in *Proc. ISoLA 2006 : Second International Symposium on Leveraging Applications of Formal Methods, Verification and Validation ; 15 - 19 November 2006, Paphos, Cyprus / IEEE Computer Society Leveraging Applications of Formal Methods, Verification and Validation (ISoLA 2006)*, Paphos, Cyprus, 2006, IEEE Computer Society Press, pp. 466-473.

[mc]square: A model checker for microcontroller code

Bibtex entry :

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@inproceedings { SK06a,
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  booktitle = { ISoLA 2006 : Second International Symposium on
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                Society Leveraging Applications of Formal Methods,
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  year = { 2006 },
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  url = { http://publications.rwth-aachen.de/record/117076 },
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}
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[SRW+06]

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Schlich, B., Rohrbach, M., Weber, M., and Kowalewski, S., "Model checking software for microcontrollers", , Aachen, AIB-2006-11, 2006.

Model checking software for microcontrollers

Bibtex entry :

```
@techreport { SRW+06,  
  author = { Schlich, Bastian and Rohrbach, Michael and Weber,  
Michael  
  and Kowalewski, Stefan },  
  title = { Model checking software for microcontrollers },  
  pages = { 33 Bl. : graph. Darst. },  
  volume = { 2006,11 },  
  number = { AIB-2006-11 },  
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  year = { 2006 },  
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  url = { http://webdoc.sub.gwdg.de/ebook/serien/ah/AIB/2006-11.pdf  
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}
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[SK05b]

[PDFBIB](#)

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Bibtex entry :

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@techreport { SK05b,  
  author = { Schlich, Bastian and Kowalewski, Stefan },  
  title = { Model checking C source code for embedded systems },  
  booktitle = { IEEE/NASA Workshop on Leveraging Applications of  
Formal  
  Methods, Verification, and Validation : IEEE/NASA ISoLA 2005  
; proceedings of a workshop held at the Loyola College  
Graduate Center, Columbia, Maryland, USA, 23 - 24 September  
2005 ; with a special track on the theme of formal methods  
in human and robotic space exploration / National  
Aeronautics and Space Administration, Goddard Space Flight  
Center. Ed.: Tiziana Margaria ... },
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pages = { 65-77 },
number = { NASA/CP-2005-212788 },
year = { 2005 },
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typ = { PUB:(DE-HGF)8 },
reportid = { RWTH-CONV-009447 },
cin = { 120000 / 122810 },
url = { http://publications.rwth-aachen.de/record/111740 },
}
```

[SK04]

[PDFBIB](#)

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C Model Checker: Eine Übersicht

Bibtex entry :

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@inbook { SK04,
  author = { Schlich, Bastian and Kowalewski, Stefan },
  title = { C Model Checker: Eine {"U}bersicht },
  year = { 2004 },
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Teaching

BSc/MSc/Diploma Theses

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- [Extending EVA to 16 and 32 Bit Systems](#) (Michael Lambertz)
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Dominique Marcel Gückel)

- [Extending the Model Checker \[mc\]square to Handle the Infineon XC167 Microcontroller](#) (Florian Scheuer)
- [Application of Static Analysis in the Field of Model Checking Software for Embedded Systems](#) (Jann Löll)
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- [Studies on the Application Potential of Formal Verification in the Engine Management Systems Software Domain](#) (Dr. rer. nat. Andreas Polzer)
- [Requirements for a Model Checker for Matlab/Simulink](#) (Dr. rer. nat. Jacob Palczynski)

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- Summer semester 09: [Applying Formal Verification Methods to Embedded Systems](#) (Seminar)
- Winter semester 08/09: [Static Analysis of Embedded Systems Software](#) (Seminar)
- Summer semester 08: [Formal Methods for Embedded Systems](#) (Lecture)
- Summer semester 07: [Formal Methods for Embedded Software](#) (Lecture)
- Winter semester 06/07: [Testing Embedded Systems](#) (Seminar)
- Summer semester 06: [SUN Software Award 2006](#)
- Winter semester 05/06: [Systematic Software Engineering](#) (Lecture)
- Summer semester 05: [Formal Methods for Embedded Systems](#) (Lecture)
- Winter semester 04/05: [Systems Programming](#) (Lecture)
- Winter semester 04/05: [Application of Model Checking to Embedded Systems](#) (Seminar)
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