

Dr.rer.nat. Bastian Schlich



Publikationen

[BSK+15]

[PDFBIB](#)

Biallas, S., Simon, H., Kowalewski, S., Hauck-Stattelmann, S., and Schlich, B., "Automatische Testfallgenerierung für SPS-Programme mittels Zeilenüberdeckung", in *Proc. AUTOMATION 2015*, 2015, VDI, pp. 100-111.

Automatische Testfallgenerierung für SPS-Programme mittels Zeilenüberdeckung

Bibtex entry :

```
@inproceedings { 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 },  
  publisher = { VDI },  
  publishedas = { Druck },  
  language = { ger },  
  pages = { 100--111 },  
  year = { 2015 },  
  timestamp = { 2015.07.08 },  
  illkey = { conference },  
  illprojectkey = { Arcade },  
  url = { {http://publications.embedded.rwth-aachen.de/file/5r} },  
  for_reporting_period = { 2015 },  
}
```

[HBS+15]

PDFBIB

Hauck-Stattelmann, S., Biallas, S., Schlich, B., Kowalewski, S., and Jetley, R., "Analyzing the Restart Behavior of Industrial Control Applications", in *Proc. FM 2015: Formal Methods*, 2015, vol. 9109 in Lecture Notes in Computer Science, Springer International Publishing, pp. 585-588.

Analyzing the Restart Behavior of Industrial Control Applications

Bibtex entry :

```
@inproceedings { HBS+15,  
  keywords = { Static Analysis; Abstract Interpretation; Programmable  
Logic  
  Controllers },  
  author = { Hauck-Stattelmann, Stefan and Biallas, Sebastian and  
  Schlich, Bastian and Kowalewski, Stefan and Jetley, Raoul },  
  editor = { Björner, Nikolaj and de Boer, Frank },  
  title = { Analyzing the Restart Behavior of Industrial Control  
  Applications },  
  booktitle = { FM 2015: Formal Methods },  
  series = { Lecture Notes in Computer Science },  
  volume = { 9109 },  
  publisher = { Springer International Publishing },  
  publishedas = { Druck Online },  
  isbn = { 978-3-319-19248-2 },  
  language = { eng },  
  pages = { 585--588 },  
  year = { 2015 },  
  timestamp = { 2015.06.03 },  
  illkey = { conference },  
  illprojectkey = { Arcade },  
  url = { http://publications.embedded.rwth-aachen.de/file/5u },  
  for_reporting_period = { 2015 },  
}
```

[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. International Conference on Emerging Technologies and Factory Automation (ETFA)*, 2015, IEEE, pp. 1-4.

Automatic Test Case Generation for PLC Programs using Coverage Metrics

Bibtex entry :

```
@inproceedings { SFB+15,  
  author = { Simon, Hendrik and Friedrich, Nico and Biallas,
```

```

Sebastian
  and Hauck-Stattelmann, Stefan and Schlich, Bastian and
  Kowalewski, Stefan },
title = { Automatic Test Case Generation for PLC Programs using
  Coverage Metrics },
booktitle = { International Conference on Emerging Technologies and
  Factory Automation (ETFA) },
publisher = { IEEE },
publishedas = { Druck },
isbn = { 978-1-4673-7929-8 },
language = { eng },
pages = { 1--4 },
year = { 2015 },
timestamp = { 2015.09.15 },
illkey = { conference },
for_reporting_period = { 2015 },
}

```

[BKSS14]

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. Proceedings of the 12th International Workshop on Discrete Event Systems*, Cachan, France, 2014, IFAC, pp. 400-405.

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

Bibtex entry :

```

@inproceedings { BKSS14,
  address = { Cachan, France },
  author = { Biallas, Sebastian and Kowalewski, Stefan and
  Stattelmann,
    Stefan and Schlich, Bastian },
  title = { Efficient Handling of States in Abstract Interpretation
of
  Industrial Programmable Logic Controller Code },
  booktitle = { Proceedings of the 12th International Workshop on
Discrete
  Event Systems },
  publisher = { IFAC },
  publishedas = { Druck Online },
  language = { eng },
  pages = { 400--405 },
  year = { 2014 },
  timestamp = { 2014.02.24 },
  illkey = { conference },
  illprojectkey = { Arcade },
  for_reporting_period = { 2014 },
}

```

```
}
```

[SBSK14]

PDFBIB

Stattelmann, S., Biallas, S., Schlich, B., and Kowalewski, S., "Applying Static Code Analysis on Industrial Controller Code", in *Proc. 19th IEEE International Conference on Emerging Technologies and Factory Automation (ETFA)*, 2014, IEEE, Work in Progress Best Paper Award.

Applying Static Code Analysis on Industrial Controller Code

Bibtex entry :

```
@inproceedings { SBSK14,  
  author = { Stattelmann, Stefan and Biallas, Sebastian and Schlich,  
            Bastian and Kowalewski, Stefan },  
  title = { Applying Static Code Analysis on Industrial Controller  
Code },  
  booktitle = { 19th IEEE International Conference on Emerging  
Technologies  
and Factory Automation (ETFA) },  
  publisher = { IEEE },  
  publishedas = { Druck Online },  
  isbn = { 978-1-4799-4845-1 },  
  language = { eng },  
  year = { 2014 },  
  timestamp = { 2014.09.17 },  
  illkey = { conference },  
  illprojectkey = { Arcade },  
  note = { Work in Progress Best Paper Award },  
  for_reporting_period = { 2014 },  
}
```

[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", in *Proc. Automation 2013*, 2013 in VDI Berichte, VDI-Verlag, pp. 75-79, Langfassung auf CD-ROM.

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

Bibtex entry :

```
@inproceedings { BKK+13,  
  author = { Biallas, Sebastian and Kamin, Volker and Kowalewski,  
Stefan  
and Schlich, Bastian and Sehestedt, Stephan and Stattelmann,  
Stefan },
```

```
editor = { VDI Wissensforum },
title = { Verifikation von sicherheitsgerichteten SPS-Programmen
mit
    Hilfe von Safety-Automaten },
booktitle = { Automation 2013 },
series = { VDI Berichte },
publisher = { VDI-Verlag },
publishedas = { Druck },
isbn = { 978-3-18-092209-6 },
language = { ger },
pages = { 75--79 },
year = { 2013 },
timestamp = { 2013.04.16 },
illkey = { conference },
illprojectkey = { Arcade },
note = { Langfassung auf CD-ROM },
for_reporting_period = { 2013 },
}
```

[BKS12a]

PDFBIB

Biallas, S., Kowalewski, S., and Schlich, B., "Automatische Wertebereichsanalyse von SPS-Programmen", in *Proc. AUTOMATION 2012, Baden-Baden, Germany*, Düsseldorf, 2012 in VDI-Berichte, VDI-Verlag, pp. 79-83, Long version (12 pages) on CD-ROM.

Automatische Wertebereichsanalyse von SPS-Programmen

Bibtex entry :

```
@inproceedings { BKS12a,
  address = { D{"u}sseldorf },
  author = { Biallas, Sebastian and Kowalewski, Stefan and Schlich,
    Bastian },
  title = { Automatische Wertebereichsanalyse von SPS-Programmen },
  booktitle = { AUTOMATION 2012, Baden-Baden, Germany },
  publisher = { VDI-Verlag },
  publishedas = { Druck },
  series = { VDI-Berichte },
  number = { 2171 },
  isbn = { 978-3-18-092171-6 },
  language = { ger },
  pages = { 79--83 },
  year = { 2012 },
  timestamp = { 2012.04.20 },
  illkey = { conference },
  illprojectkey = { Arcade },
  for_reporting_period = { 2012 },
  note = { Long version (12 pages) on CD-ROM },
}
```

[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,  
  address = { Guadalajara, Mexico },  
  author = { Biallas, Sebastian and Kowalewski, Stefan and Schlich,  
    Bastian },  
  title = { Range and Value-Set Analysis for Programmable Logic  
    Controllers },  
  booktitle = { Proceedings of the 11th International Workshop on  
Discrete  
  Event Systems },  
  publisher = { IFAC },  
  publishedas = { Druck Online },  
  isbn = { 978-3-902823-28-1 },  
  language = { eng },  
  pages = { 378--383 },  
  year = { 2012 },  
  timestamp = { 2012.06.26 },  
  illkey = { conference },  
  illprojectkey = { Arcade },  
  url = { http://publications.embedded.rwth-aachen.de/file/3x },  
  for_reporting_period = { 2012 },  
}
```

[BKS12c]

[PDFBIB](#)

Biallas, S., Kowalewski, S., and Schlich, B., "Automatische Wertebereichsanalyse -- Formale Verifikation für SPS-Programme", *Automatisierungstechnische Praxis (atp EDITION)*, 54. Jahrgang, 7-8/2012, pp. 68-75, 2012

Automatische Wertebereichsanalyse -- Formale Verifikation für SPS-Programme

Bibtex entry :

```
@article { BKS12c,  
  author = { Biallas, Sebastian and Kowalewski, Stefan and Schlich,  
    Bastian },  
  title = { Automatische Wertebereichsanalyse -- Formale Verifikation  
f{"u}r SPS-Programme },
```

```

journal = { Automatisierungstechnische Praxis (atp EDITION), 54.
           Jahrgang, 7-8/2012 },
year = { 2012 },
pages = { 68--75 },
publisher = { Oldenbourg Industrieverlag },
publishedas = { Druck },
issn = { 2190-4111 },
illkey = { journal },
illprojectkey = { Arcade },
language = { ger },
timestamp = { 2012.08.02 },
for_reporting_period = { 2012 },
}

```

[BBKS10]

[PDFBIB](#)

Biallas, S., Brauer, J., Kowalewski, S., and Schlich, B., "Automatically Deriving Symbolic Invariants for PLC Programs Written in IL", in *Proc. FORMS/FORMAT 2010*, 2011, Springer Berlin Heidelberg, pp. 237-245.

Automatically Deriving Symbolic Invariants for {PLC} Programs Written in {IL}

Bibtex entry :

```

@inproceedings { BBKS10,
  author = { Biallas, Sebastian and Brauer, J{"o}rg and Kowalewski,
            Stefan and Schlich, Bastian },
  title = { Automatically Deriving Symbolic Invariants for {PLC}
            Programs Written in {IL} },
  booktitle = { FORMS/FORMAT 2010 },
  editor = { Schnieder, Eckehard and Tarnai, Geza },
  publisher = { Springer Berlin Heidelberg },
  publishedas = { Druck },
  language = { eng },
  year = { 2011 },
  timestamp = { 2010.08.19 },
  isbn = { 978-3-642-14261-1 },
  pages = { 237--245 },
  url = {
http://www.embedded.rwth-aachen.de/lib/exe/fetch.php?media=bib:bbks10.p
df },
  illkey = { conference },
  illprojectkey = { Arcade },
  for_reporting_period = { 2010 },
}

```

[BKS11]

[PDFBIB](#)

Biallas, S., Kowalewski, S., and Schlich, B., "Leistungsfähige Verifikation von industriellen SPS-

Programmen mittels Model-Checking und statischer Analyse", in *Proc. AUTOMATION 2011, Baden-Baden, Germany*, Düsseldorf, 2011 in VDI-Berichte, VDI-Verlag, pp. 67-72.

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

Bibtex entry :

```
@inproceedings { BKS11,  
  address = { D{"u}sseldorf },  
  author = { Biallas, Sebastian and Kowalewski, Stefan and Schlich,  
    Bastian },  
  title = { Leistungsf{"a}hige Verifikation von industriellen  
    SPS-Programmen mittels Model-Checking und statischer Analyse },  
  booktitle = { AUTOMATION 2011, Baden-Baden, Germany },  
  isbn = { 978-3-18-092143-3 },  
  issn = { 0083-5560 },  
  number = { 2143 },  
  pages = { 67--72 },  
  publisher = { VDI-Verlag },  
  publishedas = { Druck },  
  series = { VDI-Berichte },  
  language = { eng },  
  year = { 2011 },  
  timestamp = { 2011.04.20 },  
  illkey = { conference },  
  illprojectkey = { Arcade },  
  for_reporting_period = { 2011 },  
}
```

[SBK11]

[PDFBIB](#)

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

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

Bibtex entry :

```
@article { SBK11,  
  author = { Schlich, Bastian and Brauer, J{"o}rg and Kowalewski,  
    Stefan },  
  title = { Application of Static Analyses for State Space Reduction  
    to  
    Microcontroller Binary Code },
```



```

journal = { Sci. Comput. Program. },
year = { 2011 },
volume = { 76 },
number = { 2 },
pages = { 100--118 },
issn = { 0167-6423 },
url = {
http://www.embedded.rwth-aachen.de/lib/exe/fetch.php?media=bib:sbk10.pdf
},
  illkey = { journal },
  timestamp = { 2010.12.06 },
  illprojectkey = { Arcade },
  for_reporting_period = { 2011 },
}

```

[BFK+10]

PDFBIB

Biallas, S., Frey, G., Kowalewski, S., Schlich, B., and Soliman, D., "Formale Verifikation von Sicherheits-Funktionsbausteinen der PLCopen auf Modell- und Code-Ebene", in *Proc. Tagungsband Entwicklung und Betrieb komplexer Automatisierungssysteme (EKA 2010)*, 2010, ifak Magdeburg, pp. 49-57.

Formale Verifikation von Sicherheits-Funktionsbausteinen der PLCopen auf Modell- und Code-Ebene

Bibtex entry :

```

@inproceedings { BFK+10,
  author = { Biallas, Sebastian and Frey, Georg and Kowalewski, Stefan
    and Schlich, Bastian and Soliman, Doaa },
  title = { Formale Verifikation von Sicherheits-Funktionsbausteinen
der
  PLCopen auf Modell- und Code-Ebene },
  booktitle = { Tagungsband Entwicklung und Betrieb komplexer
  Automatisierungssysteme (EKA 2010) },
  publisher = { ifak Magdeburg },
  publishedas = { Druck },
  language = { ger },
  pages = { 49--57 },
  year = { 2010 },
  isbn = { 978-3-940961-41-9 },
  location = { Magdeburg, Germany },
  illkey = { conference },
  illprojectkey = { Arcade },
  for_reporting_period = { 2010 },
}

```

[BNS10]

PDFBIB

Brauer, J., Noll, T., and Schlich, B., "Interval Analysis of Microcontroller Code using Abstract Interpretation of Hardware and Software", in *Proc. Proceedings of the 13th International Workshop on Software and Compilers for Embedded Systems (SCOPES 2010)*, 2010, ACM.

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

Bibtex entry :

```
@inproceedings { BNS10,  
  author = { Brauer, J{\\"o}rg and Noll, Thomas and Schlich, Bastian  
 },  
  title = { Interval Analysis of Microcontroller Code using Abstract  
    Interpretation of Hardware and Software },  
  booktitle = { Proceedings of the 13th International Workshop on  
 Software  
    and Compilers for Embedded Systems (SCOPES 2010) },  
  year = { 2010 },  
  publisher = { ACM },  
  url = {  
 http://www.embedded.rwth-aachen.de/lib/exe/fetch.php?media=bib:BNS10.pdf  
 },  
  timestamp = { 2010.04.01 },  
  illkey = { conference },  
  illprojectkey = { Arcade },  
  for_reporting_period = { 2010 },  
 }
```

[GSBK10]

PDFBIB

Gückel, D., Schlich, B., Brauer, J., and Kowalewski, S., "Synthesizing Simulators for Model Checking Microcontroller Binary Code", in *Proc. Proceedings of the 13th IEEE International Symposium on Design and Diagnostics of Electronic Circuits and Systems (DDECS 2010)*, 2010, IEEE, pp. 313-316.

Synthesizing Simulators for Model Checking Microcontroller Binary Code

Bibtex entry :

```
@inproceedings { GSBK10,  
  author = { G{\\"u}ckel, Dominique and Schlich, Bastian and Brauer,  
    J{\\"o}rg and Kowalewski, Stefan },  
  title = { Synthesizing Simulators for Model Checking  
 Microcontroller  
    Binary Code },  
  booktitle = { Proceedings of the 13th IEEE International Symposium  
 on
```

```

    Design and Diagnostics of Electronic Circuits and Systems
    (DDECS 2010) },
    year = { 2010 },
    publisher = { IEEE },
    pages = { 313--316 },
    owner = { gueckel },
    illkey = { conference },
    url = {
http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=5491761 },
    timestamp = { 2010.03.08 },
    illprojectkey = { Arcade },
    for_reporting_period = { 2010 },
}

```

[RHS+10]

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*, pp. 186-205, 2010

Model Checking Embedded Software of an Industrial Knitting Machine

Bibtex entry :

```

@article { RHS+10,
    author = { Reinbacher, Thomas and Horauer, Martin and Schlich,
Bastian
    and Brauer, J{"o}rg and Scheuer, Florian },
    title = { Model Checking Embedded Software of an Industrial
Knitting
    Machine },
    journal = { International Journal of Information Technology,
Communications and Convergence },
    year = { 2010 },
    pages = { 186--205 },
    publisher = { Inderscience Enterprises Ltd },
    publishedas = { Online Druck },
    issn = { 2042-3217 },
    illkey = { journal },
    language = { eng },
    url = {
http://inderscience.metapress.com/content/y664g84625r780l0/fulltext.pdf
},
    timestamp = { 2010.08.15 },
    for_reporting_period = { 2010 },
}

```

[Sch10]

PDFBIB

Schlich, B., "Model Checking of Software for Microcontrollers", *ACM Transactions in Embedded Computing Systems (TECS)*, vol. 9, iss. 4, pp. 1-27, 2010

Model Checking of Software for Microcontrollers

Bibtex entry :

```
@article { Sch10,  
  author = { Schlich, Bastian },  
  journal = { ACM Transactions in Embedded Computing Systems (TECS) },  
  title = { Model Checking of Software for Microcontrollers },  
  year = { 2010 },  
  volume = { 9 },  
  number = { 4 },  
  pages = { 1--27 },  
  issn = { 1539-9087 },  
  doi = { http://doi.acm.org/10.1145/1721695.1721702 },  
  publisher = { ACM },  
  illkey = { journal },  
  for_reporting_period = { 2010 },  
}
```

[BHS09]

[PDFBIB](#)

Brauer, J., Huuck, R., and Schlich, B., "Interprocedural Pointer Analysis in Goanna", *Electronic Notes in Theoretical Computer Science*, vol. 254, p. 65, 2009, Proceedings of the 4th International Workshop on Systems Software Verification (SSV 2009)

Interprocedural Pointer Analysis in Goanna

Bibtex entry :

```
@article { BHS09,  
  author = { Brauer, Jörg and Huuck, Ralf and Schlich, Bastian },  
  title = { Interprocedural Pointer Analysis in Goanna },  
  journal = { Electronic Notes in Theoretical Computer Science },  
  volume = { 254 },  
  pages = { 65–83 },  
  year = { 2009 },  
  note = { Proceedings of the 4th International Workshop on Systems  
    Software Verification (SSV 2009) },  
  publisher = { Elsevier },  
  issn = { 1571-0661 },  
  url = { http://portal.acm.org/citation.cfm?id=1630458 },  
  illkey = { conference },  
  for_reporting_period = { Old },  
}
```

[BSK09b]

PDFBIB

Brauer, J., Schlich, B., and Kowalewski, S., "Parallel and Distributed Invariant Checking of Microcontroller Software", *Electronic Notes in Theoretical Computer Science*, vol. 254, p. 45, 2009, Proceedings of the 4th International Workshop on Systems Software Verification (SSV 2009)

Parallel and Distributed Invariant Checking of Microcontroller Software

Bibtex entry :

```
@article { BSK09b,  
  title = { Parallel and Distributed Invariant Checking of  
    Microcontroller Software },  
  journal = { Electronic Notes in Theoretical Computer Science },  
  volume = { 254 },  
  pages = { 45–63 },  
  year = { 2009 },  
  note = { Proceedings of the 4th International Workshop on Systems  
    Software Verification (SSV 2009) },  
  publisher = { Elsevier },  
  issn = { 1571-0661 },  
  author = { Brauer, J{"o}rg and Schlich, Bastian and Kowalewski,  
Stefan },  
  url = { http://portal.acm.org/citation.cfm?id=1630177.1630457 },  
  illkey = { conference },  
  illprojectkey = { Arcade },  
  for_reporting_period = { Old },  
}
```

[BSRK09]

PDFBIB

Brauer, J., Schlich, B., Reinbacher, T., and Kowalewski, S., "Stack Bounds Analysis of Microcontroller Assembly Code", in *Proc. Workshop on Embedded Security (WESS 2009), Grenoble, France, 2009*, ACM Press.

Stack Bounds Analysis of Microcontroller Assembly Code

Bibtex entry :

```
@inproceedings { BSRK09,  
  author = { Brauer, J{"o}rg and Schlich, Bastian and Reinbacher,  
Thomas  
  and Kowalewski, Stefan },  
  title = { Stack Bounds Analysis of Microcontroller Assembly Code },  
  booktitle = { Workshop on Embedded Security (WESS 2009), Grenoble,  
France },  
  year = { 2009 },  
  publisher = { ACM Press },  
  url = { http://portal.acm.org/citation.cfm?id=1631716.1631721 },
```

```
    illkey = { conference },
    for_reporting_period = { Old },
}
```

[FHST09]

[PDFBIB](#)

Fehnker, A., Huuck, R., Schlich, B., and Tapp, M., "Automatic Bug Detection in Microcontroller Software by Static Program Analysis", in *Proc. SOFSEM 2009: Theory and Practise of Computer Science, Spindleruv Mlýn, Czech Republic, 2009*, vol. 5404 in Lecture Notes in Computer Science, Springer, pp. 267-278.

Automatic Bug Detection in Microcontroller Software by Static Program Analysis

Bibtex entry :

```
@inproceedings { FHST09,
  author = { Fehnker, Ansgar and Huuck, Ralf and Schlich, Bastian and
    Tapp, Michael },
  booktitle = { SOFSEM 2009: Theory and Practise of Computer Science,
    Spindleruv Ml\'{y}n, Czech Republic },
  doi = { 10.1007/978-3-540-95891-8_26 },
  isbn = { 978-3-540-95890-1 },
  pages = { 267--278 },
  publisher = { Springer },
  series = { Lecture Notes in Computer Science },
  title = { Automatic Bug Detection in Microcontroller Software by
    Static Program Analysis },
  volume = { 5404 },
  year = { 2009 },
  illkey = { conference },
  for_reporting_period = { Old },
}
```

[Mit09]

[PDFBIB](#)

Mitsching, R., "Testing in the Industrial Development Process for Embedded Systems", in *Proc. Doctoral Symposium on Systems Software Verification (DS SSV'09) Real Software, Real Problems, Real Solutions, 2009*, RWTH Aachen University, pp. 23-25.

Testing in the Industrial Development Process for Embedded Systems

Bibtex entry :

```
@inproceedings { Mit09,
  author = { Mitsching, Ralf },
  title = { Testing in the Industrial Development Process for
    Embedded
```

```

    Systems },
  booktitle = { Doctoral Symposium on Systems Software Verification
(DS
    SSV'09) Real Software, Real Problems, Real Solutions },
  year = { 2009 },
  pages = { 23--25 },
  publisher = { RWTH Aachen University },
  editor = { Ralf Huuck and Gerwin Klein and Bastian Schlich },
  isbn = { 0935-3232 },
  owner = { mitsching },
  timestamp = { 2009.08.10 },
  url = { http://aib.informatik.rwth-aachen.de/2009/2009-14.pdf },
  illkey = { conference },
  for_reporting_period = { 2010 },
}

```

[RBHS09]

[PDFBIB](#)

Reinbacher, T., Brauer, J., Horauer, M., and Schlich, B., "Refining Assembly Code Static Analysis for the Intel MCS-51 Microcontroller", in *Proc. Industrial Embedded Systems (SIES'09)*, Lausanne, Switzerland, 2009, IEEE Computer Society Press, pp. 161-170.

Refining Assembly Code Static Analysis for the Intel MCS-51 Microcontroller

Bibtex entry :

```

@inproceedings { RBHS09,
  author = { Reinbacher, Thomas and Brauer, J{\o}rg and Horauer,
Martin
    and Schlich, Bastian },
  booktitle = { Industrial Embedded Systems (SIES'09), Lausanne,
Switzerland },
  doi = { 10.1109/SIES.2009.5196212 },
  isbn = { 978-1-4244-4109-9 },
  pages = { 161--170 },
  publisher = { IEEE Computer Society Press },
  title = { Refining Assembly Code Static Analysis for the Intel
MCS-51
    Microcontroller },
  year = { 2009 },
  url = {
http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=5196212 },
  illkey = { conference },
  for_reporting_period = { 0ld },
}

```

[RHS+09]

[PDFBIB](#)

Reinbacher, T., Horauer, M., Schlich, B., Brauer, J., and Scheuer, F., "Model Checking Assembly

Code of an Industrial Knitting Machine", in *Proc. Embedded and Multimedia Computing (EM-Com 2009)*, Jeju, Korea, 2009, IEEE Computer Society Press, pp. 1-8.

Model Checking Assembly Code of an Industrial Knitting Machine

Bibtex entry :

```
@inproceedings { RHS+09,  
  author = { Reinbacher, Thomas and Horauer, Martin and Schlich,  
    Bastian  
    and Brauer, Jörg and Scheuer, Florian },  
  title = { Model Checking Assembly Code of an Industrial Knitting  
    Machine },  
  booktitle = { Embedded and Multimedia Computing (EM-Com 2009),  
    Jeju, Korea },  
  year = { 2009 },  
  publisher = { IEEE Computer Society Press },  
  pages = { 1--8 },  
  illkey = { conference },  
  url = {  
    http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=5402986 },  
  for_reporting_period = { 2010 },  
}
```

[RHS09]

PDFBIB

Reinbacher, T., Horauer, M., and Schlich, B., "Using 3-Valued Memory Representation for State Space Reduction in Embedded Assembly Code Model Checking", in *Proc. Design and Diagnostics of Electronic Circuits and Systems (DDECS 2009)*, Liberec, Czech Republic, 2009, IEEE Computer Society Press, pp. 114-119.

Using 3-Valued Memory Representation for State Space Reduction in Embedded Assembly Code Model Checking

Bibtex entry :

```
@inproceedings { RHS09,  
  author = { Reinbacher, Thomas and Horauer, Martin and Schlich,  
    Bastian },  
  booktitle = { Design and Diagnostics of Electronic Circuits and  
    Systems  
    (DDECS 2009), Liberec, Czech Republic },  
  doi = { 10.1109/DDECS.2009.5012109 },  
  isbn = { 978-1-4244-3341-4 },  
  pages = { 114--119 },  
  publisher = { IEEE Computer Society Press },  
  title = { Using 3-Valued Memory Representation for State Space  
    Reduction in Embedded Assembly Code Model Checking },
```



```

year = { 2009 },
illkey = { conference },
for_reporting_period = { Old },
}

```

[SBWK09]

[PDFBIB](#)

Schlich, B., Brauer, J., Wernerus, J., and Kowalewski, S., "Direct Model Checking of PLC Programs in IL", in *Proc. Dependable Control of Discrete Systems (DCDS'09), Bari, Italy, 2009*, pp. 28-33.

Direct Model Checking of {PLC} Programs in {IL}

Bibtex entry :

```

@inproceedings { SBWK09,
  author = { Schlich, Bastian and Brauer, J{"o}rg and Wernerus,
J{"o}rg
    and Kowalewski, Stefan },
  booktitle = { Dependable Control of Discrete Systems (DCDS'09),
Bari,
    Italy },
  isbn = { 978-3-902661-44-9 },
  title = { Direct Model Checking of {PLC} Programs in {IL} },
  year = { 2009 },
  url = {
http://www.embedded.rwth-aachen.de/lib/exe/fetch.php?media=bib:SBWK09.p
df },
  illkey = { conference },
  pages = { 28--33 },
  for_reporting_period = { Old },
}

```

[SK09]

[PDFBIB](#)

Schlich, B. and Kowalewski, S., "Model Checking C Source Code for Embedded Systems", *International Journal on Software Tools for Technology Transfer (STTT)*, vol. 11, iss. 3, pp. 187-202, 2009

Model Checking C Source Code for Embedded Systems

Bibtex entry :

```

@article { SK09,
  author = { Schlich, Bastian and Kowalewski, Stefan },
  doi = { 10.1007/s10009-009-0106-5 },
  issn = { 1433-2779 },
  journal = { International Journal on Software Tools for Technology
    Transfer (STTT) },
  number = { 3 },
  pages = { 187--202 },
  publisher = { Springer },
}

```

```
read = { No },
title = { Model Checking {C} Source Code for Embedded Systems },
volume = { 11 },
year = { 2009 },
illkey = { journal },
for_reporting_period = { Old },
}
```

[SKW09]

[PDFBIB](#)

Schlich, B., Kowalewski, S., and Wernerus, J., "Verifikation von SPS-Programmen in AWL mit Hilfe von direktem Model-Checking", in *Proc. AUTOMATION 2009, Baden-Baden, Germany*, Düsseldorf, 2009 in VDI-Berichte, VDI Verlag.

{Verifikation von SPS-Programmen in AWL mit Hilfe von direktem Model-Checking}

Bibtex entry :

```
@inproceedings { SKW09,
  address = { D{"u}sseldorf },
  author = { Schlich, Bastian and Kowalewski, Stefan and Wernerus,
    J{"o}rg },
  booktitle = { AUTOMATION 2009, Baden-Baden, Germany },
  isbn = { 978-3-18-092067-2 },
  number = { 2067 },
  publisher = { VDI Verlag },
  series = { VDI-Berichte },
  title = { {Verifikation von SPS-Programmen in AWL mit Hilfe von
    direktem Model-Checking} },
  url = { http://publications.embedded.rwth-aachen.de/file/42 },
  year = { 2009 },
  illkey = { conference },
  for_reporting_period = { Old },
}
```

[SNBB09]

[PDFBIB](#)

Schlich, B., Noll, T., Brauer, J., and Brutschy, L., "Reduction of Interrupt Handler Executions for Model Checking Embedded Software", in *Proc. Haifa Verification Conference (HVC 2009), Haifa, Israel*, 2009, vol. 6405 in Lecture Notes in Computer Science, Springer, pp. 5-20.

Reduction of Interrupt Handler Executions for Model Checking Embedded Software

Bibtex entry :

```
@inproceedings { SNBB09,
  author = { Schlich, B. and Noll, T. and Brauer, J. and Brutschy, L.
```

```

},
  title = { Reduction of Interrupt Handler Executions for Model
Checking
          Embedded Software },
  booktitle = { Haifa Verification Conference (HVC 2009), Haifa,
Israel },
  year = { 2009 },
  url = {
http://www.embedded.rwth-aachen.de/lib/exe/fetch.php?media=bib:SNBB09.p
df },
  publisher = { Springer },
  series = { Lecture Notes in Computer Science },
  volume = { 6405 },
  pages = { 5--20 },
  illkey = { conference },
  for_reporting_period = { Old },
}

```

[BKKS08]

PDFBIB

Beckers, J., Klünder, D., Kowalewski, S., and Schlich, B., "Direct Support for Model Checking of Abstract State Machines by Utilizing Simulation", in *Proc. Abstract State Machines, B and Z (ABZ 2008)*, London, UK, 2008, vol. 5238 in Lecture Notes in Computer Science, Springer, pp. 112-124.

Direct Support for Model Checking of Abstract State Machines by Utilizing Simulation

Bibtex entry :

```

@inproceedings { BKKS08,
  author = { Beckers, J{"o}rg and Kl{"u}nder, Daniel and
Kowalewski,
            Stefan and Schlich, Bastian },
  booktitle = { Abstract State Machines, B and Z (ABZ 2008), London,
UK },
  doi = { 10.1007/978-3-540-87603-8_10 },
  isbn = { 978-3-540-87602-1 },
  pages = { 112--124 },
  publisher = { Springer },
  series = { Lecture Notes in Computer Science },
  title = { Direct Support for Model Checking of Abstract State
Machines
            by Utilizing Simulation },
  volume = { 5238 },
  year = { 2008 },
  illkey = { conference },
  for_reporting_period = { Old },
}

```

[HNSW08]

PDFBIB

Herberich, G., Noll, T., Schlich, B., and Weise, C., "Proving Correctness of an Efficient Abstraction for Interrupt Handling", *Electronic Notes in Theoretical Computer Science*, vol. 217, pp. 133-150, 2008, Proceedings of the 3rd International Workshop on Systems Software Verification (SSV 2008)

Proving Correctness of an Efficient Abstraction for Interrupt Handling

Bibtex entry :

```
@article { HNSW08,  
  author = { Herberich, Gerlind and Noll, Thomas and Schlich, Bastian  
and  
  Weise, Carsten },  
  doi = { 10.1016/j.entcs.2008.06.046 },  
  issn = { 1571-0661 },  
  journal = { Electronic Notes in Theoretical Computer Science },  
  note = { Proceedings of the 3rd International Workshop on Systems  
Software Verification (SSV 2008) },  
  pages = { 133--150 },  
  publisher = { Elsevier },  
  title = { Proving Correctness of an Efficient Abstraction for  
Interrupt Handling },  
  volume = { 217 },  
  year = { 2008 },  
  illkey = { journal },  
  for_reporting_period = { Old },  
}
```

[NS08]

PDFBIB

Noll, T. and Schlich, B., "Delayed Nondeterminism in Model Checking Embedded Systems Assembly Code", in *Proc. Hardware and Software: Verification and Testing (HVC 2007)*, Haifa, Israel, 2008, vol. 4899 in Lecture Notes in Computer Science, Springer, pp. 185-201.

Delayed Nondeterminism in Model Checking Embedded Systems Assembly Code

Bibtex entry :

```
@inproceedings { NS08,  
  author = { Noll, Thomas and Schlich, Bastian },  
  booktitle = { Hardware and Software: Verification and Testing (HVC  
2007),  
  Haifa, Israel },  
  doi = { 10.1007/978-3-540-77966-7_16 },  
  isbn = { 978-3-540-77964-3 },
```

```
issn = { 0302-9743 },
pages = { 185--201 },
publisher = { Springer },
series = { Lecture Notes in Computer Science },
title = { Delayed Nondeterminism in Model Checking Embedded Systems
  Assembly Code },
volume = { 4899 },
year = { 2008 },
illkey = { conference },
for_reporting_period = { Old },
}
```

[RKHS08a]

PDFBIB

Reinbacher, T., Kramer, M., Horauer, M., and Schlich, B., "Challenges in Embedded Model Checking --- A Simulator for the [mc]square Model Checker", in *Proc. Industrial Embedded Systems (SIES 2008), Le Grande Motte, France, 2008*, IEEE Computer Society Press, pp. 245-248.

Challenges in Embedded Model Checking --- A Simulator for the [mc]square Model Checker

Bibtex entry :

```
@inproceedings { RKHS08a,
  author = { Reinbacher, Thomas and Kramer, Michael and Horauer,
  Martin
    and Schlich, Bastian },
  booktitle = { Industrial Embedded Systems (SIES 2008), Le Grande
  Motte,
    France },
  doi = { 10.1109/SIES.2008.4577709 },
  isbn = { 978-1-4244-1994-4 },
  pages = { 245--248 },
  publisher = { IEEE Computer Society Press },
  title = { Challenges in Embedded Model Checking --- A Simulator for
    the [mc]square Model Checker },
  year = { 2008 },
  illkey = { conference },
  for_reporting_period = { Old },
}
```

[RKHS08b]

PDFBIB

Reinbacher, T., Kramer, M., Horauer, M., and Schlich, B., "Motivating Model Checking for Embedded Systems Software", in *Proc. Mechatronic and Embedded Systems and Applications (MESA08), Beijing, China, 2008*, IEEE Computer Society Press, pp. 546-551.

Motivating Model Checking for Embedded Systems Software

Bibtex entry :

```
@inproceedings { RKHS08b,  
  author = { Reinbacher, Thomas and Kramer, Michael and Horauer,  
  Martin  
    and Schlich, Bastian },  
  booktitle = { Mechatronic and Embedded Systems and Applications  
(MESA08),  
    Beijing, China },  
  doi = { 10.1109/MESA.2008.4735653 },  
  isbn = { 978-1-4244-2367-5 },  
  pages = { 546--551 },  
  publisher = { IEEE Computer Society Press },  
  title = { Motivating Model Checking for Embedded Systems Software  
},  
  year = { 2008 },  
  illkey = { conference },  
  for_reporting_period = { Old },  
}
```

[Sch08]

[PDFBIB](#)

Schlich, B., "Model Checking of Software for Microcontrollers," PhD Thesis , Aachen, Germany, 2008.

Model Checking of Software for Microcontrollers

Bibtex entry :

```
@phdthesis { Sch08,  
  address = { Aachen, Germany },  
  author = { Schlich, Bastian },  
  issn = { 0935-3232 },  
  month = { June },  
  school = { RWTH Aachen University },  
  title = { Model Checking of Software for Microcontrollers },  
  type = { Dissertation },  
  url = { http://aib.informatik.rwth-aachen.de/2008/2008-14.pdf },  
  year = { 2008 },  
  illkey = { thesis },  
  for_reporting_period = { Old },  
}
```

[SGK08]

[PDFBIB](#)

Schlich, B., Gückel, D., and Kowalewski, S., "Modeling the Environment of Microcontrollers to

Tackle the State-Explosion Problem in Model Checking", in *Proc. Formal Methods for Automation and Safety in Railway and Automotive Systems (FORMS/FORMAT 2008)*, Budapest, Hungary, Budapest, Hungary, 2008, L'Harmattan, pp. 27-34.

Modeling the Environment of Microcontrollers to Tackle the State-Explosion Problem in Model Checking

Bibtex entry :

```
@inproceedings { SGK08,
  address = { Budapest, Hungary },
  author = { Schlich, Bastian and G{"u}ckel, Dominique and
Kowalewski,
  Stefan },
  booktitle = { Formal Methods for Automation and Safety in Railway
and
  Automotive Systems (FORMS/FORMAT 2008), Budapest, Hungary },
  editor = { Tarnai, G. and Schnieder, E. },
  isbn = { 978-963-236-138-3 },
  pages = { 27--34 },
  publisher = { L'Harmattan },
  title = { Modeling the Environment of Microcontrollers to Tackle
the
  State-Explosion Problem in Model Checking },
  year = { 2008 },
  illkey = { conference },
  for_reporting_period = { Old },
}
```

[SLK08]

PDFBIB

Schlich, B., Löll, J., and Kowalewski, S., "Application of Static Analyses for State Space Reduction to Microcontroller Assembly Code", in *Proc. Formal Methods for Industrial Critical Systems (FMICS 2007)*, Berlin, Germany, 2008, vol. 4916 in Lecture Notes in Computer Science, Springer, pp. 21-37.

Application of Static Analyses for State Space Reduction to Microcontroller Assembly Code

Bibtex entry :

```
@inproceedings { SLK08,
  author = { Schlich, Bastian and L{"o}ll, Jann and Kowalewski,
Stefan },
  booktitle = { Formal Methods for Industrial Critical Systems (FMICS
2007),
  Berlin, Germany },
  doi = { 10.1007/978-3-540-79707-4_4 },
  isbn = { 978-3-540-79706-7 },
```

```
pages = { 21--37 },
publisher = { Springer },
series = { Lecture Notes in Computer Science },
title = { Application of Static Analyses for State Space Reduction
to
    Microcontroller Assembly Code },
volume = { 4916 },
year = { 2008 },
illkey = { conference },
for_reporting_period = { Old },
}
```

[SK07f]

PDFBIB

Schlich, B. and Kowalewski, S., "An Extendable Architecture for Model Checking Hardware-Specific Automotive Microcontroller Code", in *Proc. Formal Methods for Automation and Safety in Railway and Automotive Systems (FORMS/FORMAT 2007)*, Braunschweig, Germany, Braunschweig, Germany, 2007, GZVB, pp. 202-212.

An Extendable Architecture for Model Checking Hardware-Specific Automotive Microcontroller Code

Bibtex entry :

```
@inproceedings { SK07f,
    address = { Braunschweig, Germany },
    author = { Schlich, Bastian and Kowalewski, Stefan },
    booktitle = { Formal Methods for Automation and Safety in Railway
and
    Automotive Systems (FORMS/FORMAT 2007), Braunschweig,
    Germany },
    editor = { Schnieder, E. and Tarnai, G. },
    isbn = { 978-3-937655-09-3 },
    pages = { 202--212 },
    publisher = { GZVB },
    title = { An Extendable Architecture for Model Checking
    Hardware-Specific Automotive Microcontroller Code },
    year = { 2007 },
    illkey = { conference },
    for_reporting_period = { Old },
}
```

[SSK07]

PDFBIB

Schlich, B., Salewski, F., and Kowalewski, S., "Applying Model Checking to an Automotive Microcontroller Application", in *Proc. Industrial Embedded Systems (SIES'07)*, Lisbon, Portugal, 2007, IEEE Computer Society Press, pp. 209-216.

Applying Model Checking to an Automotive Microcontroller Application

Bibtex entry :

```
@inproceedings { SSK07,
  author = { Schlich, , Bastian and Salewski, Falk and Kowalewski,
Stefan },
  booktitle = { Industrial Embedded Systems (SIES'07), Lisbon,
Portugal },
  doi = { 10.1109/SIES.2007.4297337 },
  isbn = { 1-4244-0840-7 },
  pages = { 209--216 },
  publisher = { IEEE Computer Society Press },
  title = { Applying Model Checking to an Automotive Microcontroller
Application },
  year = { 2007 },
  illkey = { conference },
  for_reporting_period = { Old },
}
```

[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 (INFORMATIK 2006)*, Dresden, Germany, 2006, vol. 1 in Lecture Notes in Informatics, Gesellschaft für Informatik e.V., pp. 751-755.

{Eine Evaluationssuite zur schnellen Bewertung von Matlab/Simulink-Modelcheckern}

Bibtex entry :

```
@inproceedings { PSK06,
  author = { Palczynski, Jacob and Schlich, Bastian and Kowalewski,
Stefan },
  booktitle = { Informatik 2006: Informatik f{"u}r Menschen
(INFORMATIK
2006), Dresden, Germany },
  isbn = { 978-3-88579-187-4 },
  issn = { 1617-5468 },
  number = { P-93 },
  pages = { 751--755 },
  publisher = { Gesellschaft f{"u}r Informatik e.V. },
  series = { Lecture Notes in Informatics },
  title = { {Eine Evaluationssuite zur schnellen Bewertung von
Matlab/Simulink-Modelcheckern} },
  volume = { 1 },
  year = { 2006 },
}
```

```
    illkey = { conference },
    for_reporting_period = { Old },
}
```

[SK06b]

PDFBIB

Schlich, B. and Kowalewski, S., "[mc]square: A model checker for microcontroller code", in *Proc. 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 :

```
@inproceedings { SK06b,
  author = { Schlich, Bastian and Kowalewski, Stefan },
  booktitle = { Leveraging Applications of Formal Methods,
  Verification and
    Validation (ISoLA 2006), Paphos, Cyprus },
  doi = { 10.1109/ISoLA.2006.62 },
  isbn = { 978-0-7695-3071-0 },
  pages = { 466--473 },
  publisher = { IEEE Computer Society Press },
  title = { [mc]square: A model checker for microcontroller code },
  year = { 2006 },
  illkey = { conference },
  for_reporting_period = { Old },
}
```

[SRWK06]

PDFBIB

Schlich, B., Rohrbach, M., Weber, M., and Kowalewski, S., "Model Checking Software for Microcontrollers", RWTH Aachen University, Aachen, Germany, AIB-2006-11, 2006.

Model Checking Software for Microcontrollers

Bibtex entry :

```
@techreport { SRWK06,
  address = { Aachen, Germany },
  author = { Schlich, Bastian and Rohrbach, Michael and Weber,
  Michael
    and Kowalewski, Stefan },
  institution = { RWTH Aachen University },
  issn = { 0935-3232 },
  number = { AIB-2006-11 },
  title = { Model Checking Software for Microcontrollers },
  url = { http://aib.informatik.rwth-aachen.de/2006/2006-11.pdf },
  year = { 2006 },
  for_reporting_period = { Old },
}
```

}

[SK05]

PDFBIB

Schlich, B. and Kowalewski, S., "Model Checking C Source Code for Embedded Systems", in *Proc. IEEE/NASA Workshop on Leveraging Applications of Formal Methods, Verification, and Validation (ISoLA 2005), Columbia, Maryland, USA, Maryland, USA, 2005, NASA, pp. 65-77, NASA/CP-2005-212788.*

Model Checking C Source Code for Embedded Systems

Bibtex entry :

```
@inproceedings { SK05,
  address = { Maryland, USA },
  author = { Schlich, Bastian and Kowalewski, Stefan },
  booktitle = { IEEE/NASA Workshop on Leveraging Applications of
Formal
  Methods, Verification, and Validation (ISoLA 2005),
  Columbia, Maryland, USA },
  month = { September },
  note = { NASA/CP-2005-212788 },
  pages = { 65--77 },
  publisher = { NASA },
  title = { Model Checking {C} Source Code for Embedded Systems },
  year = { 2005 },
  illkey = { conference },
  for_reporting_period = { Old },
}
```

[SK04]

PDFBIB

Schlich, B. and Kowalewski, S., "C Model Checker: Eine Übersicht", Embedded Software Laboratory, RWTH Aachen University, Aachen, Germany, RWTH-I11-2004-1, 2004.

{C Model Checker: Eine Übersicht}

Bibtex entry :

```
@techreport { SK04,
  address = { Aachen, Germany },
  author = { Schlich, Bastian and Kowalewski, Stefan },
  institution = { Embedded Software Laboratory, RWTH Aachen
University },
  number = { RWTH-I11-2004-1 },
  title = { {C Model Checker: Eine {"U}bersicht} },
  year = { 2004 },
  for_reporting_period = { Old },
}
```

From:

<https://www.embedded.rwth-aachen.de/> - **Lehrstuhl Informatik 11 - Embedded Software Laboratory**

Permanent link:

<https://www.embedded.rwth-aachen.de/doku.php?id=lehrstuhl:mitarbeiter:schlich>

Last update: **2012/03/21 13:12**

