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Kontakt



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Offene Abschlussarbeiten

Aktuell liegen keine ausformulierten, offenen Abschlussarbeiten vor. Bei Interesse an formalen Methoden können wir aber zusammen geeignete Themen für Bachelor- und Masterarbeiten ausarbeiten. Eigene Vorschläge sind ebenfalls möglich.

Lehre

Semester	Titel	Art
WS 18/19	Formale Methoden für Steuerungssoftware	V
WS 18/19	Formale und semiformale Methoden für eingebettete Software	S
SS 18	Formale und semiformale Methoden für eingebettete Software	S
WS 17/18	Formale Methoden für Steuerungssoftware	V
WS 17/18	Formale und semiformale Methoden für eingebettete Software	S
SS 17	Formale und semiformale Methoden für eingebettete Software	S
WS 16/17	Formale Methoden für Steuerungssoftware	V
SS 16	Formale und semiformale Methoden für eingebettete Software	S
WS 15/16	Formale Methoden für Steuerungssoftware	V

Semester	Titel	Art
WS 15/16	Formale und semiformale Methoden für eingebettete Software	S
SS 15	Formale und semiformale Methoden für eingebettete Software	S

Publikationen

[BHK18]

[PDFBIB](#)

Bohlender, D., Hamm, D., and Kowalewski, S., "Cycle-Bounded Model Checking of PLC Software via Dynamic Large-Block Encoding", in *Proc. Applied computing 2018 : the 33rd Annual ACM Symposium on Applied Computing : Pau, France, April 9-13, 2018 / sponsored by: ACM Special Interest Group on Applied Computing ; conference chairs: Hisham M. Haddad (Kennesaw State University, USA), Roger L. Wainwright (University of Tulsa, USA), Richard Chbeir (University of Pau & Pays Adour, France)*, New York, NY, 2018, ACM, pp. 1891-1898.

Cycle-Bounded Model Checking of PLC Software via Dynamic Large-Block Encoding

Bibtex entry :

```
@inproceedings { BHK18,
  author = { Bohlender, Dimitri and Hamm, Daniel and Kowalewski, Stefan },
  title = { Cycle-Bounded Model Checking of PLC Software via Dynamic Large-Block Encoding },
  booktitle = { Applied computing 2018 : the 33rd Annual ACM Symposium on Applied Computing : Pau, France, April 9-13, 2018 / sponsored by: ACM Special Interest Group on Applied Computing ; conference chairs: Hisham M. Haddad (Kennesaw State University, USA), Roger L. Wainwright (University of Tulsa, USA), Richard Chbeir (University of Pau & Pays Adour, France) },
  publisher = { ACM },
  pages = { 1891-1898 },
  year = { 2018 },
  address = { New York, NY },
  organization = { 33rd ACM Symposium on Applied Computing, Pau (France), 2018-04-09 - 2018-04-13 },
  doi = { 10.1145/3167132.3167334 },
  typ = { PUB:(DE-HGF)7 },
  reportid = { RWTH-2018-231950 },
  cin = { 122810 / 120000 },
  url = { http://publications.rwth-aachen.de/record/752221 },
}
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[BK18]

[PDFBIB](#)

Bohlender, D. and Kowalewski, S., "Compositional Verification of PLC Software using Horn Clauses and Mode Abstraction", *IFAC-PapersOnLine*, vol. 51, iss. 7, pp. 428-433, 2018

Compositional Verification of PLC Software using Horn Clauses and Mode Abstraction

Bibtex entry :

```
@article { BK18,  
  author = { Bohlender, Dimitri and Kowalewski, Stefan },  
  title = { Compositional Verification of PLC Software using Horn  
    Clauses and Mode Abstraction },  
  journal = { IFAC-PapersOnLine },  
  pages = { 428-433 },  
  volume = { 51 },  
  number = { 7 },  
  year = { 2018 },  
  address = { Laxenburg },  
  issn = { 2405-8963 },  
  organization = { 14th IFAC International Workshop on Discrete Event  
Systems,  
  Castellammare di Stabia (Italy), 2018-05-30 - 2018-06-01 },  
  doi = { 10.1016/j.ifacol.2018.06.336 },  
  typ = { PUB:(DE-HGF)16 },  
  reportid = { RWTH-2018-227071 },  
  cin = { 122810 / 120000 },  
  url = { http://publications.rwth-aachen.de/record/730763 },  
}
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[BK18a]

[PDFBIB](#)

Bohlender, D. and Kowalewski, S., "Design and Verification of Restart-Robust Industrial Control Software", in *Proc. Integrated Formal Methods : 14th International Conference, IFM 2018, Maynooth, Ireland, September 5-7, 2018, Proceedings / edited by Carlo A. Furia, Kirsten Winter*, Cham, 2018 in Lecture Notes in Computer Science, Springer International Publishing, pp. 47-68.

Design and Verification of Restart-Robust Industrial Control Software

Bibtex entry :

```
@inproceedings { BK18a,  
  author = { Bohlender, Dimitri and Kowalewski, Stefan },  
  title = { Design and Verification of Restart-Robust Industrial  
Control  
Software },  
  booktitle = { Integrated Formal Methods : 14th International  
Conference,
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IFM 2018, Maynooth, Ireland, September 5-7, 2018,  
Proceedings / edited by Carlo A. Furia, Kirsten Winter },  
publisher = { Springer International Publishing },  
pages = { 47-68 },  
series = { Lecture Notes in Computer Science },  
year = { 2018 },  
address = { Cham },  
organization = { 14th International Conference on integrated Formal  
Methods },  
doi = { 10.1007/978-3-319-98938-9_4 },  
typ = { PUB:(DE-HGF)7 },  
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cin = { 122810 / 120000 },  
url = { http://publications.rwth-aachen.de/record/752219 },  
}
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[UVS+18]

[PDFBIB](#)

Ulewicz, S., Vogel-Heuser, B., Simon, H., Bohlender, D., Obster, M., and Kowalewski, S., "A priori test coverage estimation for automated production systems : Using generated behavior models for coverage calculation", in *Proc. 2017 22nd IEEE International Conference on Emerging Technologies and Factory Automation : September 12-15, 2017, Limassol, Cyprus / ABB, IEEE, IES, University of Cyprus*, [Piscataway, NJ], 2018 in IEEE International Conference on Emerging Technologies and Factory Automation-ETFA, IEEE, p. 4.

A priori test coverage estimation for automated production systems : Using generated behavior models for coverage calculation

Bibtex entry :

```
@inproceedings { UVS+18,  
  author = { Ulewicz, Sebastian and Vogel-Heuser, Birgit and Simon,  
    Hendrik and Bohlender, Dimitri and Obster, Mathias and  
    Kowalewski, Stefan },  
  title = { A priori test coverage estimation for automated  
production  
systems : Using generated behavior models for coverage  
calculation },  
  booktitle = { 2017 22nd IEEE International Conference on Emerging  
Technologies and Factory Automation : September 12-15, 2017,  
Limassol, Cyprus / ABB, IEEE, IES, University of Cyprus },  
  publisher = { IEEE },  
  pages = { 4 Seiten },  
  series = { IEEE International Conference on Emerging Technologies  
and  
Factory Automation-ETFA },  
  year = { 2018 },  
  address = { [Piscataway, NJ] },
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organization = { 22nd IEEE International Conference on Emerging
Technologies
and Factory Automation, Limassol (Cyprus), 2017-09-12 -
2017-09-15 },
doi = { 10.1109/ETFA.2017.8247704 },
typ = { PUB:(DE-HGF)7 },
reportid = { RWTH-2018-223451 },
cin = { 122810 / 120000 },
url = { http://publications.rwth-aachen.de/record/722217 },
}

```

[BSF+16]

PDFBIB

Bohlender, D., Simon, H., Friedrich, N., Kowalewski, S., and Hauck-Stattelmann, S., "Concolic test generation for PLC programs using coverage metrics", in *Proc. 2016 13th International Workshop on Discrete Event Systems (WODES) : May 30-June 1, 2016, Xi'an, China / edited by Christos G. Cassandras, Alessandro Giua, Zhiwu Li ; sponsored by IEEE - Control Systems Society, Piscataway, NJ, 2016, IEEE, pp. 432-437.*

Concolic test generation for PLC programs using coverage metrics

Bibtex entry :

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@inproceedings { BSF+16,
author = { Bohlender, Dimitri and Simon, Hendrik and Friedrich,
Nico
and Kowalewski, Stefan and Hauck-Stattelmann, Stefan },
title = { Concolic test generation for PLC programs using coverage
metrics },
booktitle = { 2016 13th International Workshop on Discrete Event
Systems
(WODES) : May 30-June 1, 2016, Xi'an, China / edited by
Christos G. Cassandras, Alessandro Giua, Zhiwu Li ;
sponsored by IEEE - Control Systems Society },
publisher = { IEEE },
pages = { 432-437 },
year = { 2016 },
address = { Piscataway, NJ },
organization = { 13th International Workshop on Discrete Event
Systems, Xi'an
(Peoples R China), 2016-05-30 - 2016-06-01 },
doi = { 10.1109/WODES.2016.7497884 },
typ = { PUB:(DE-HGF)7 },
reportid = { RWTH-2016-11193 },
cin = { 122810 / 120000 },
url = { http://publications.rwth-aachen.de/record/679431 },
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```

[BSK+16]

PDFBIB

Bohlender, D., Simon, H., Kowalewski, S., and Hauck-Stattelmann, S., "Symbolische Ausführung zum Testen von SPS-Programmen", in *Proc. Automation 2016 : secure & reliable in the digital world : 17. Branchentreff der Mess- und Automatisierungstechnik : Baden-Baden, 07. und 08. Juni 2016 / VDI/VDE Mess- und Automatisierungstechnik*, Düsseldorf, 2016 in VDI-Berichte, VDI Verlag GmbH, pp. 13-14.

Symbolische Ausführung zum Testen von SPS-Programmen

Bibtex entry :

```
@inproceedings { BSK+16,  
  author = { Bohlender, Dimitri and Simon, Hendrik and Kowalewski,  
Stefan  
  and Hauck-Stattelmann, S. },  
  title = { Symbolische Ausf{\u}hrung zum Testen von SPS-Programmen  
},  
  booktitle = { Automation 2016 : secure & reliable in the digital  
world :  
  17. Branchentreff der Mess- und Automatisierungstechnik :  
  Baden-Baden, 07. und 08. Juni 2016 / VDI/VDE Mess- und  
  Automatisierungstechnik },  
  publisher = { VDI Verlag GmbH },  
  pages = { 13-14 },  
  series = { VDI-Berichte },  
  year = { 2016 },  
  address = { D{\u}sseldorf },  
  organization = { 17. Branchentreff der Mess- und  
Automatisierungstechnik,  
  Baden-Baden (Germany), 2016-06-07 - 2016-06-08 },  
  typ = { PUB:(DE-HGF)7 },  
  reportid = { RWTH-2016-12035 },  
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  url = { http://publications.rwth-aachen.de/record/680852 },  
}
```

[BSK16]

PDFBIB

Bohlender, D., Simon, H., and Kowalewski, S., "Symbolic verification of PLC safety-applications based on PLCopen automata", in *Proc. MBMV 2016 : 19. GI/ITG/GMM-Workshop "Methoden und Beschreibungssprachen zur Modellierung und Verifikation von Schaltungen und Systemen" : Albert-Ludwigs-Universität Freiburg im Breisgau 1.-2. März 2016 / Ralf Wimmer (Herausgeber)*, Freiburg im Breisgau, 2016, Albert-Ludwigs-Universität, pp. 33-45.

Symbolic verification of PLC safety-applications based on PLCopen automata

Bibtex entry :

```
@inproceedings { BSK16,
  author = { Bohlender, Dimitri and Simon, Hendrik and Kowalewski,
Stefan },
  title = { Symbolic verification of PLC safety-applications based on
PLCopen automata },
  booktitle = { MBMV 2016 : 19. GI/ITG/GMM-Workshop "Methoden und
Beschreibungssprachen zur Modellierung und Verifikation von
Schaltungen und Systemen" : Albert-Ludwigs-Universit{"a}t
Freiburg im Breisgau 1.-2. M{"a}rz 2016 / Ralf Wimmer
(Herausgeber) },
  publisher = { Albert-Ludwigs-Universit{"a}t },
  pages = { 33-45 },
  year = { 2016 },
  address = { Freiburg im Breisgau },
  organization = { 19. GI/ITG/GMM-Workshop "Methoden und
Beschreibungssprachen
zur Modellierung und Verifikation von Schaltungen und
Systemen", Freiburg im Breisgau (Germany), 2016-03-01 -
2016-03-02 },
  doi = { 10.6094/UNIFR/10636 },
  typ = { PUB:(DE-HGF)7 },
  reportid = { RWTH-CONV-207902 },
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http://publications.rwth-aachen.de/record/573821/files/573821.pdf },
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```

[BBJKNN14]

PDFBIB

Bohlender, D., Brintjes, H., Junges, S., Katelaan, J., Nguyen, V. Y., and Noll, T., "A Review of Statistical Model Checking Pitfalls on Real-Time Stochastic Models", in *Proc. Leveraging Applications of Formal Methods, Verification and Validation. Specialized Techniques and Applications - 6th International Symposium, ISoLA 2014, Imperial, Corfu, Greece, October 8-11, 2014, Proceedings, Part {II}*, 2014, IEEE, pp. 177-192.

A Review of Statistical Model Checking Pitfalls on Real-Time Stochastic Models**Bibtex entry :**

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@inproceedings { BBJKNN14,
  author = { Dimitri Bohlender and Harold Brintjes and Sebastian
Junges
and Jens Katelaan and Viet Yen Nguyen and Thomas Noll },
  title = { A Review of Statistical Model Checking Pitfalls on Real-
Time
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  booktitle = { Leveraging Applications of Formal Methods,
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Verification and
  Validation. Specialized Techniques and Applications - 6th
  International Symposium, ISoLA 2014, Imperial, Corfu,
  Greece, October 8-11, 2014, Proceedings, Part {II} },
pages = { 177--192 },
publisher = { IEEE },
publishedas = { Druck Online },
isbn = { 978-3-662-45231-8 },
language = { eng },
year = { 2014 },
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illkey = { conference },
for_reporting_period = { 2014 },
}
```

[BBK13]

[PDFBIB](#)

Biallas, S., Bohlender, D., and Kowalewski, S., "Boolean and Modular Abstractions for Programmable Logic Controllers", in *Proc. Dependable Control of Discrete Systems : DCDS13. - Vol. 4, P. 1*, Laxenburg, 2013, IFAC, pp. 97-102.

Boolean and Modular Abstractions for Programmable Logic Controllers

Bibtex entry :

```
@inproceedings { BBK13,
  author = { Biallas, Sebastian and Bohlender, Dimitri and
    Kowalewski,
      Stefan },
  title = { Boolean and Modular Abstractions for Programmable Logic
    Controllers },
  booktitle = { Dependable Control of Discrete Systems : DCDS13. -
    Vol. 4,
      P. 1 },
  publisher = { IFAC },
  pages = { 97-102 },
  year = { 2013 },
  address = { Laxenburg },
  doi = { 10.3182/20130904-3-UK-4041.00011 },
  typ = { PUB:(DE-HGF)8 },
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