

Mathias Obster, M.Sc. RWTH

| Research Assistant
 obster[at]embedded[dot]rwth-aachen[dot]de

Phone: +49 241 80 21155
 Fax: +49 241 80 22150

Address: Ahornstr. 55, 52074 Aachen
 Office: Room 2313 (building H)



Research Topics

- Soft PLCs
- Execution and Simulation of PLC Programs on RTAndroid
- IEC 61131
- IDEs for PLC Programs on mobile devices

Open theses

The following list might not be complete. You can ask me for further topic suggestions for a bachelor thesis or a master thesis. Own suggestions are possible as well.

- Master: [Inkrementelle Analyse für Steuerungscode](#)

Teaching

Semester	Titel	Art
Summer term 13	Praktikum Systemprogrammierung	P
Winter term 13/14	Praktikum Systemprogrammierung	P
	Praktikum Systemprogrammierung	P
Summer term 14	SPOS xt: Exploring embedded applications	P
	Sicherheit industrieller Steuerungssysteme	S

Summer Celebration 2014

Graduate celebration for Computer Science students of the RWTH Aachen. This year it is organized by the chair of Computer Science 11. <http://www.sommerfest-informatik.de>

- Contact person
- Planning, organisation and running the celebration

Publications

[Obs20]

[PDFBIB](#)

Obster, M., "Unterstützung der SPS-Programmierung durch statische Analyse während der Programmeingabe", PhD Thesis, Aachen, 2020.

Unterstützung der SPS-Programmierung durch statische Analyse während der Programmeingabe

Bibtex entry :

```
@phdthesis { Obs20,  
  author = { Obster, Mathias },  
  othercontributors = { Kowalewski, Stefan and Frey, Georg },  
  title = { Unterst{"u}tzung der SPS-Programmierung durch statische  
    Analyse w{"a}hrend der Programmeingabe },  
  publisher = { RWTH Aachen University },  
  school = { RWTH Aachen University },  
  pages = { 1 Online-Ressource (xi, 118 Seiten) : Illustrationen },  
  series = { Aachener Informatik-Berichte },  
  year = { 2020 },  
  address = { Aachen },  
  doi = { 10.18154/RWTH-2021-01742 },  
  typ = { PUB:(DE-HGF)11 },  
  reportid = { RWTH-2021-01742 },  
  cin = { 122810 / 120000 },  
  url = {  
http://publications.rwth-aachen.de/record/812214/files/812214.pdf },  
}
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[OK18]

[PDFBIB](#)

Obster, M. and Kowalewski, S., "A live static code analysis architecture for PLC software", 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 live static code analysis architecture for PLC software

Bibtex entry :

```
@inproceedings { OK18,
```

```

author = { Obster, Mathias and Kowalewski, Stefan },
title = { A live static code analysis architecture for PLC software
},
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] },
organization = { 22nd IEEE International Conference on Emerging
Technologies
and Factory Automation, Limassol (Cyprus), 2017-09-12 -
2017-09-15 },
doi = { 10.1109/ETFA.2017.8247707 },
typ = { PUB:(DE-HGF)7 },
reportid = { RWTH-2018-223453 },
cin = { 122810 / 120000 },
url = { http://publications.rwth-aachen.de/record/722219 },
}

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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 :

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@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 },

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publisher = { IEEE },
pages = { 4 Seiten },
series = { IEEE International Conference on Emerging Technologies
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year = { 2018 },
address = { [Piscataway, NJ] },
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 },
}
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[KKO+15]

[PDFBIB](#)

Kowalewski, S., Kalkov, I., Obster, M., and Thönnessen, D., "Echtzeiterweiterung für Android: SPS inside", *IEE - Elektrische Automatisierung + Antriebstechnik*, pp. 58-61, 2015

Echtzeiterweiterung für Android: SPS inside

Bibtex entry :

```
@article { KKO+15,
    author = { Kowalewski, Stefan and Kalkov, Igor and Obster, Mathias
and
    Th{"o}nnessen, David },
    title = { Echtzeiterweiterung f{"u}r Android: SPS inside },
    journal = { IEE - Elektrische Automatisierung + Antriebstechnik },
    publisher = { IEE },
    pages = { 58-61 },
    year = { 2015 },
    issn = { 1434-2898 },
    typ = { PUB:(DE-HGF)16 },
    reportid = { RWTH-CONV-236305 },
    cin = { 122810 / 120000 },
    url = { http://publications.rwth-aachen.de/record/752275 },
}
```

[OKK14]

[PDFBIB](#)

Obster, M., Kalkov, I., and Kowalewski, S., "Development and Execution of PLC Programs on Real-Time Capable Mobile Devices", 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. 8.

Development and Execution of PLC Programs on Real-Time Capable Mobile Devices

Bibtex entry :

```
@inproceedings { OKK14,  
  author = { Obster, Mathias and Kalkov, Igor and Kowalewski, Stefan  
},  
  title = { Development and Execution of PLC Programs on Real-Time  
  Capable Mobile Devices },  
  booktitle = { 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] },  
  publisher = { IEEE },  
  pages = { 8 Seiten },  
  year = { 2014 },  
  address = { Piscataway, NJ },  
  organization = { 2014 IEEE [International Conference on] Emerging  
  Technologies and Factory Automation, Barcelona (Spain),  
  2014-09-16 - 2014-09-19 },  
  doi = { 10.1109/ETFA.2014.7005218 },  
  typ = { PUB:(DE-HGF)7 },  
  reportid = { RWTH-CONV-206433 },  
  cin = { 120000 / 122810 },  
  url = { http://publications.rwth-aachen.de/record/444615 },  
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