

CISPA Helmholtz Center for Information Security
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Education

- Dr.-Ing. (PhD) 2010 Saarland University and Max Planck Institute for Informatics, Germany, supervised by V. Sofronie-Stokkermans.
- Dipl.-Inf. (MSc) 2004 Saarland University and Max Planck Institute for Informatics, Germany.

Habilitation

Habilitation awarded by Saarland University, Germany, in April 2019.

Work Experience

- 2018–now **Tenure-track faculty**, CISPA Helmholtz Center for Information Security, Germany.
- 2014–2018 **Research group leader** at Saarland University, Germany.
Principal investigator of DFG project on *Parameterized Synthesis*.
- 2012–2014 **Postdoctoral researcher** at Technische Universität Graz (TU Graz), Austria,
Secure and Correct Systems (SCoS) group.
- 2012 **Visiting professor** at University of Ljubljana, Slovenia.
- 2010–2012 **Postdoctoral researcher** at Ecole Polytechnique Fédérale de Lausanne (EPFL),
Switzerland, *Laboratory for Automated Reasoning and Analysis (LARA)*.

Track Record Highlights

- **published** one book and more than 40 scholarly articles.
- **awarded funding** for research project *Automatic Synthesis of Distributed and Parameterized Systems* by the DFG (single PI, total funding: 474.600 €)
- **main organizer and co-founder** of *Reactive Synthesis Competition (SYNTCOMP)*, held annually as satellite event of the *Conference on Computer-Aided Verification (CAV)*

Organization Committee Membership

- Reactive Synthesis Competition SYNTCOMP (2014–2020):
 - **co-founder** of the competition
 - **main organizer**, annually 2014–2018, co-organizer since 2019.
- Workshop on Formal Reasoning in Distributed Algorithms (FRIDA 2016–2020): co-organizer.
- Conference on Computer and Communications Security (CCS 2019): web chair.
- Workshop on Synthesis (SYNT 2017): program co-chair.
- Conference on Computer-Aided Verification (CAV 2014): publicity & proceedings chair.

Program Committee Membership

- Symposium on Automated Technology for Verification and Analysis (ATVA 2020)
- Symposium on Principles and Practice of Parallel Programming (PPoPP 2019; ERC)
- Working Conference on Verified Software: Theories, Tools, and Experiments (VSTTE 2018)
- International Conference on Parallel, Distributed and Network-based Processing (PDP 2017)
- Conference on Computer-Aided Verification (CAV 2016–2018; AEC)
- Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS 2015)
- Workshop on Synthesis (SYNT 2014, 2016-2019)
- Workshop on Strategies in Rewriting, Proving and Programming (IWS 2012)

Additional Referee Activities

- Journals:** Journal of the ACM, ACM Transactions on Software Engineering and Methodology, ACM Computing Surveys, Theoretical Computer Science, Transactions on Software Engineering, Distributed Computing, IEEE Transactions on Control Systems Technology, Transactions on Computational Logic, Logical Methods in Computer Science, Formal Aspects of Computing, Acta Informatica, Information and Computation, Information Processing Letters, . . .
- Conferences:** CAV, TACAS, FMCAD, CONCUR, CDC, ICALP, DISC, SSS, IJCAR, CSL-LICS, CADE, HVC, VMCAI, VSTTE, SAS, ICFEM, POPL, FRODOS, . . .

Selected Publications

- [CAV20a] Nouraldin Jaber, Swen Jacobs, Christopher Wagner, Milind Kulkarni and Roopsha Samanta: *Parameterized Verification of Systems with Global Synchronization and Guards*. In **CAV 2020**.
- [CAV20b] Hamed Nemati, Pablo Buiras, Andreas Lindner, Roberto Guanciale and Swen Jacobs: *Validation of Abstract Side-Channel Models for Computer Architectures*. In **CAV 2020**.
- [Acta20a] Swen Jacobs, Mouhammad Sakr: *A symbolic algorithm for lazy synthesis of eager strategies*. In **Acta Informatica** 57(1-2), 2020.
- [Acta20b] Nahal Mirzaie, Fathiyeh Faghieh, Swen Jacobs, Borzoo Bonakdarpour: *Parameterized synthesis of self-stabilizing protocols in symmetric networks*. In **Acta Informatica** 57(1-2), 2020.
- [ATVA19] Roderick Bloem, Swen Jacobs, Yakir Vizel: *Efficient Information-Flow Verification Under Speculative Execution*. In **ATVA 2019**.
- [STTT17] Swen Jacobs, 12 co-authors: *The First Reactive Synthesis Competition (SYNTCOMP 2014)*. In **STTT**, 19(3), 2017.
- [CAV16] Roderick Bloem, Nicolas Braud-Santoni, Swen Jacobs: *Synthesis of Self-Stabilising and Byzantine-Resilient Distributed Systems*. In **CAV 2016**.
- [SyntLect15] Roderick Bloem, Swen Jacobs, Ayrat Khalimov, Igor Konnov, Sasha Rubin, Helmut Veith, Josef Widder, *Decidability of Parameterized Verification*. In series: **Synthesis Lectures on Distributed Computing Theory**. Morgan & Claypool Publishers, 2015.
- [TACAS15] Roderick Bloem, Krishnendu Chatterjee, Swen Jacobs and Robert Koenigshofer, *Assume-Guarantee Synthesis for Concurrent Reactive Programs with Partial Information*. In **TACAS 2015**.
- [LMCS14] Swen Jacobs and Roderick Bloem, *Parameterized Synthesis*. In **LMCS**, 10(1:12), 2014.