### Research Interests

Programming Languages, Formal Methods, Program Analysis and Verification, Distributed Systems, and Cyber-Physical Systems.

Professional	and	Academic	Experience
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2022.10 **Quality Assurance Lead**, *Signaloid*, Cambridge, UK Remote work from Switzerland

2022.01–2022.09 **Consultant**, *Signaloid*, Cambridge, UK Remote work from Switzerland

2016.12–2021.11 **Research group leader**, *Max Planck Institute for Software Systems*, Kaiserslautern, Germany

2013.10–2016.9 **Postdoctoral researcher**, *MIT CSAIL*, Cambridge, USA In Martin C. Rinard's group.

### Education

09.2009–09.2013 **PhD**, *Institute of Science and Technology Austria*, Klosterneuburg, Austria Under supervision of Thomas A. Henzinger

09.2007–07.2009 **Master**, École Polytechnique Fédérale, Lausanne, Switzerland Master in Computer Science with specialisation in Foundations of Software

09.2004–07.2007 **Bachelor**, École Polytechnique Fédérale, Lausanne, Switzerland Bachelor in Computer Science

08.1999–06.2004 **Maturité gymnasiale**, *Lycée Collège des Creusets*, Sion, Switzerland High School in math section (specialisation: physics and numerical methods)

# Interships

07.2012–08.2012 **Intern**, *Max Planck Institute for Software Systems*, Saarbrücken, Germany One month internship under supervision of Ruzica Piskac.

05.2012–06.2012 **Research consultant**, *Microsoft Research*, Redmond, USA Three weeks consulting mandate to work with Shaz Qadeer and Ethan Jackson.

11.2011–03.2012 **Research intern**, *Microsoft Research*, Redmond, USA Three months internship with Shaz Qadeer.

07.2007–09.2007 **Intern**, *Simon Fraser University*, Vancouver, Canada Two months internship at the Software Reliability Lab with Dirk Beyer.

2006–2008 **Research assistant**, *École Polytechnique Fédérale*, Lausanne, Switzerland Part-time research assistant at Model and Theory of Computation laboratory.

# Professional Services

## Program Committee (co-)Chair

- 22th International Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI) 2020
- o 12th International Workshop on Numerical Software Verification (NSV) 2019
- Verification Mentoring Workshop (VMW) 2017

### Program Committee Member

- o 48th ACM SIGPLAN Symposium on Principles of Programming Languages (POPL) 2021.
- o 30th European Symposium on Programming (ESOP) 2021.
- o 17th Asian Symposium on Programming Languages and Systems (APLAS) 2019
- 20th International Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI) 2019
- 21st International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC) 2019
- o 9th ACM SIGPLAN Symposium on Scala (Scala) 2018
- 25th Static Analysis Symposium (SAS) 2018
- o 30th International Conference on Computer-Aided Verification (CAV) 2017
- o 10th Working Conference on Verified Software: Theories, Tools, and Experiments (VSTTE) 2018
- Student Research Competition at PLDI 2018
- 24th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS) 2018
- o 29th International Conference on Computer-Aided Verification (CAV) 2017
- 15th International Conference on Formal Methods and Models for System Design (MEMOCODE)
  2017
- o 6th Workshop on Synthesis (SYNT) 2017
- o 14th International Workshop on Satisfiability Modulo Theories (SMT) 2016
- 7th International Symposium on Games, Automata, Logics and Formal Verification (GANDALF)
  2016
- 5th Workshop on Synthesis (SYNT) 2016
- Workshop on Programming based on Actors, Agents, and Decentralized Control (AGERE) 2015
- Scala Symposium 2015
- Annual Scala Workshop (Scala) 2014

#### Reviewer

- Verification, Model Checking, and Abstract Interpretation (VMCAI) 2015 and 2022
- Logical Methods in Computer Science
- Journal of Automated Reasoning (TACAS 2018 special issue)
- o IEEE/RSJ International Conference on Intelligent Robots and Systems(IROS) 2019
- o IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems 2019
- Principles of Programming Languages (POPL) 2013, 2014, external review committee member in 2017
- Conference on Concurrency Theory (CONCUR) 2012 and 2017
- International Joint Conference on Automated Reasoning (IJCAR) 2016
- Fundamental Approaches to Software Engineering (FASE) 2016
- o Foundations of Software Science and Computation Structures (FoSSaCS) 2011 and 2016

- Journal of Automated Reasoning, special issue on interpolation 2015
- International Conference on Automated Deduction (CADE) 2015
- Tools and Algorithms for the Construction and Analysis of Systems (TACAS) 2015
- International Conference on Current Trends in Theory and Practice of Computer Science (SOF-SEM) 2015
- International Workshop on Programming based on Actors, Agents, and Decentralized Control (AGERE!@SPLASH) 2014
- Computer Science Logic Logic in Computer Science (CSL-LICS) 2014
- Acta Informatica (Volume 52)
- European Software Engineering Conference and Foundations of Software Engineering (ESEC/FSE)
  2013
- Theoretical Aspects of Software Engineering (TASE) 2013
- Verified Software: Theories, Tools, Experiments (VSTTE) 2012
- Formal Methods (FM) 2012

# Teaching and Supervision

# Student Supervision

- Supervised PhD students at the MPI-SWS
  - Marcus Pirron (2017 )
  - Aman Shankar Mathur (2017 2022) co-supervised with Rupak Majumdar
  - Felix Stutz (2020 )
- Supervised Master student
  - Richard Peifer (2018, Saarland University), master thesis "Domain Specific Language for Specifying and Planning of Industrial Processes" co-supervised with Ortwin Mailahn (ZeMA) and Ivan Gavran (MPI-SWS)
  - Manish Kumar (2018, TU Kaiserslautern), master thesis "Byzantine Fault-Tolerance in the Presence of Partial Synchrony: PSync-BFT"
  - Jennifer Ramseyer (2016, MIT CSAIL), master thesis "Implementing a Verified FTP Client and Server" co-supervised with Martin Rinard

### **Teaching**

- Advanced Automata Theory, TU Kaiserslautern
  - summer semester 2019 (co-teaching with Daniel Neider)
- Applied Verification (Project), TU Kaiserslautern
  - winter semester 2020-2021, co-teaching with Klaus Schneider and Daniel Neider
  - winter semester 2019-2020, co-teaching with Klaus Schneider and Daniel Neider
  - winter semester 2018-2019, co-teaching with Klaus Schneider and Daniel Neider
- Concurrency Theory, TU Kaiserslautern
  - winter semester 2019-2020, co-teaching with Anthony W. Lin
  - winter semester 2018-2019, co-teaching with Daniel Neider
  - winter semester 2017-2018

# **Awards**

- O Excellency Scholarships at the Master level from EPFL.
- Graduated best in class from my Bachelor at EPFL.
- Silver Medal of the ACM International Collegiate Programming Contest (Regionals, South-Western Europe) in 2007 with EPFL (6th place, Swiss champions, team with Frédéric Dubut and Christian Kauth)
- Bronze Medal of the ACM International Collegiate Programming Contest (Regionals, South-Western Europe) in 2006 with EPFL (9th place, Swiss champions, team with Frédéric Dubut and Abhishek Garg)

### Other

Student representative for the IST Graduate Student Association during the year 2011.