

Germano Schafaschek

Curriculum Vitae

Education / Research Experience

- Since 2023 **Research associate**, *Max Planck Institute for Software Systems*, Kaiserslautern, Germany.
Control Software Systems Group, headed by Dr.-Ing. Anne-Kathrin Schmuck
- 2016–2024 **PhD candidate**, *Technische Universität Berlin*, Germany.
Thesis title: *Synchronization, Linearity, and Beyond: a tropical-algebraic approach to the control of discrete-event systems with resource sharing and partial synchronization*
Supervisors: Prof. Jörg Raisch (TU Berlin) & Prof. Laurent Hardouin (Université d'Angers)
External reviewers: Prof. Stéphane Gaubert & Prof. Armand Toguyeni
- 2012–2014 **Master of Automation and Systems Engineering**, *Universidade Federal de Santa Catarina (UFSC)*, Florianópolis, Brazil.
Thesis title: *A Local Approach for the Modular Supervisory Control of Timed Discrete-Event Systems*
Supervisors: Prof. Max H. de Queiroz & Prof. José E. R. Cury
- 2006–2012 **Bachelor of Control and Automation Engineering**, *Universidade Federal de Santa Catarina (UFSC)*, Florianópolis, Brazil.
Final Project Report (B.Sc. Thesis) title: *Development of a Switching Algorithm for High-Throughput Screening Systems*
Supervisors: Prof. Max H. de Queiroz & Thomas Brunsch & Xavier David-Henriet

Teaching Experience

- 2016–2023 **Teaching and research assistant**, *Technische Universität Berlin – Fachgebiet Regelungssysteme (Control Systems Group)*, Berlin, Germany.
Courses taught: Discrete Event Systems, Hybrid Systems

Additional Instruction

- 2006–2007 **Advanced Mathematics Program**, *Universidade Federal de Santa Catarina (UFSC)* – Department of Mathematics, Florianópolis, Brazil.
Four-semester Honours Course on Advanced Calculus and Linear Algebra

Additional Research Experience

- 2011–2012 **Technische Universität Berlin – Fachgebiet Regelungssysteme (Control Systems Group)**, *Development of a Switching Algorithm for High-Throughput Screening Systems*, Bachelor Final Project, Berlin, Germany.
Supervisors: Prof. Max H. de Queiroz, Thomas Brunsch, and Xavier David-Henriet.

Paul-Ehrlich-Straße 26 – 67663 Kaiserslautern, Germany

✉ gschafaschek@mpi-sws.org

2009–2010 **Universidade Federal de Santa Catarina – Departamento de Automação e Sistemas (Automation and Systems Department)**, *Development of a Computational Tool in Scheme Language for Automata and Supervisory Control*, Scientific Initiation Project, Florianópolis, Brazil.
Supervisor: Prof. Max H. de Queiroz.

Publications

- 2024 **G. Schafaschek, L. Hardouin, and J. Raisch**, “A tropical-algebraic method for the control of timed event graphs with partial synchronization”, *Discrete Event Dynamic Systems*, 34, 429–463 (online access).
- 2022 **G. Schafaschek, L. Hardouin, and J. Raisch**, “A novel approach to the modeling and control of timed event graphs with partial synchronization”, in *Proc. 16th International Workshop on Discrete Event Systems (WODES’22)*, Prague, Czech Republic (online access).
- 2022 **P. Goltz, G. Schafaschek, L. Hardouin, and J. Raisch**, “Optimal output feedback control of timed event graphs including disturbances in a resource sharing environment”, in *Proc. 16th International Workshop on Discrete Event Systems (WODES’22)*, Prague, Czech Republic (online access).
- 2022 **D. Zorzenon, G. Schafaschek, D. Tirpák, S. Moradi, L. Hardouin, and J. Raisch**, “Implementation of procedures for optimal control of timed event graphs with resource sharing”, in *Proc. 16th International Workshop on Discrete Event Systems (WODES’22)*, Prague, Czech Republic (online access).
- 2020 **G. Schafaschek, L. Hardouin, and J. Raisch**, “Optimal control of timed event graphs with resource sharing and output-reference update”, *at – Automatisierungstechnik*, 68(7), 512–528 (online access).
- 2020 **G. Schafaschek, S. Moradi, L. Hardouin, and J. Raisch**, “Optimal control of timed event graphs with resource sharing and output-reference update”, in *Proc. 15th International Workshop on Discrete Event Systems (WODES’20)*, Rio de Janeiro, Brazil (online access).
- 2019 **L. Streng, G. Schafaschek, and J. Raisch**, “Modeling and control of prosumer-based microgrids: a Petri net approach”, in *Proc. 15th IEEE Conference on Automation Science and Engineering (CASE)*, Vancouver, Canada (online access).
- 2016 **G. Schafaschek, M. H. de Queiroz, and J. E. R. Cury**, “Local modular supervisory control of timed discrete-event systems”, *IEEE Transactions on Automatic Control*, 62(2), 934–940 (online access).
- 2015 **G. Schafaschek, M. H. de Queiroz, and J. E. R. Cury**, “Local modular supervisory control applied to the scheduling of cluster tools”, in *Proc. 11th IEEE Conference on Automation Science and Engineering (CASE)*, Gothenburg, Sweden (online access).
- 2014 **G. Schafaschek, M. H. de Queiroz, and J. E. R. Cury**, “Local modular supervisory control of timed discrete-event systems”, in *Proc. 12th International Workshop on Discrete Event Systems (WODES’14)*, Paris, France (online access).

Presentations / Events Participation

- 2022 **16th International Workshop on Discrete Event Systems (WODES'22)**, Prague, Czech Republic, September 7–8.
Paper presentation and conference attendance
- 2022 **DISC Summer School “Security and Resiliency for Cyber-Physical Systems – foundations and recent advances”**, Noordwijk, The Netherlands, June 27–30.
Poster presentation and school attendance
- 2021 **55th Control Engineering Colloquium in Boppard**, online event, February 25.
Paper presentation and colloquium attendance
- 2020 **15th International Workshop on Discrete Event Systems (WODES'20)**, Rio de Janeiro, Brazil (virtual format), November 11–13.
Paper presentation and conference attendance
- 2020 **21st IFAC World Congress**, Berlin, Germany (virtual format), July 12–17.
Conference attendance
- 2014 **12th International Workshop on Discrete Event Systems (WODES'14)**, École Normale Supérieure de Cachan, France, May 14–16.
Paper presentation and conference attendance

Awards

- 2021 **Best Paper Award** *of the year 2020 in the category Theory (Methods), at – Automatisierungstechnik*
- 2020 **Best Student Paper Award** *15th International Workshop on Discrete Event Systems (WODES'20)*

Languages

- Portuguese **Mothertongue**
- English **Fluent**
- Spanish **Good reading and conversation, basic writing**
- German **Intermediate**

Additional Information

Place of birth: União da Vitória, PR, Brazil
Nationality/citizenship: Brazilian