# Germano Schafaschek

*Curriculum Vitae*

## Education / Research Experience

Since 2025 **Research assistant**, *Friedrich-Alexander-Universität Erlangen-Nürnberg*, Erlangen, Germany.
Chair of Automatic Control, under Prof. Thomas Moor and Prof. Knut Graichen (chair holder)

2023–2025 **Research assistant**, *Max Planck Institute for Software Systems*, Kaiserslautern, Germany.
Control Software Systems Group, headed by Dr.-Ing. Anne-Kathrin Schmuck

2016–2024 **Research assistant and PhD candidate**, *Technische Universität Berlin*, Germany.
Control Systems Group, headed by Prof. Jörg Raisch
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

Since 2025 **Teaching assistant**, *Friedrich-Alexander-Universität Erlangen-Nürnberg – Chair of Automatic Control (Lehrstuhl für Regelungstechnik)*, Erlangen, Germany.

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

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## 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.

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. Strenge, 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**