

# Ana Maria Mainhardt Carpes

## Curriculum Vitae

### Education

- 2020–present **PhD Candidate**, *Max-Planck Institute for Software Systems (MPI-SWS)*, Germany.  
Supervisor: Anne-Kathrin Schmuck
- 2012–2015 **Master of Automation and Systems Engineering**, *Federal University of Santa Catarina (UFSC)*, Brazil.  
Thesis title: *Study on the Dynamics of Gene Regulatory Networks which Exhibit Circadian Cycles*  
Supervisors: Prof. José Eduardo Ribeiro Cury & Fabio Luis Baldissera
- 2006–2012 **Bachelor of Control and Automation Engineering**, *Federal University of Santa Catarina (UFSC)*, Brazil..  
Bachelor thesis title: *Properties of LD Programs: Expression and Verification*  
Supervisors: Prof. Jean-Marie A. Farines (UFSC) & Prof. Xavier Crégut (ENSEEIH)

### Additional Instruction

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

### Publications

- 2022 **A. M. Mainhardt and A. K. Schmuck**, “Assume-Guarantee Synthesis of Decentralised Supervisory Control”, in *Proc. 16th International Workshop on Discrete Event Systems (WODES’22)*, Prague, 2022, pp. 165–172.
- 2011 **J. M. A. Farines, M. H. Queiroz, V. G. Rocha, A. M. M. Carpes, F. Vernadat and X. Cregut**, “A model-driven engineering approach to formal verification of PLC programs”, in *IEEE 16th Conference on Emerging Technologies & Factory Automation (ETFA 2011)*, Toulouse, 2011, pp. 1–8.
- 2011 **J. M. A. Farines, M. H. Queiroz, M. F. Souza, A. M. M. Carpes and F. Vernadat**, “Modeling and Verification of PLC Programs by using FIACRE Tool Chain”, in *First Topcased Days (Topcased Days 2011)*, Toulouse, 2011, pp. 1–2.

### Research Experience

- 2011–2012 **Institut de Recherche en Informatique de Toulouse (IRIT), ACADIE Group – Institut National Polytechnique, ENSEEIHT**, *Properties of LD Programs: Expression and Verification*, Bachelor Final Project, Toulouse, France.  
Supervisors: Professor Jean-Marie A. Farines and Professor Xavier Crégut.
- 2009–2011 **Federal University of Santa Catarina (UFSC) – Automation and Systems Department**, *Formal Verification of PLC Programs Written in Ladder Diagram*, Florianópolis, Brazil.  
Supervisor: Professor Jean-Marie A. Farines.

Kaiserslautern, Germany

✉ [amainhardt@mpi-sws.org](mailto:amainhardt@mpi-sws.org) • [📄 anamainhardt.github.io](https://github.com/anamainhardt)

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- 2008 **Federal University of Santa Catarina (UFSC) – Automation and Systems Department**,  
*Development of Lisp Procedures for Supporting Discrete Event Systems Control Synthesis*,  
Florianópolis, Brazil.  
Supervisor: Professor Max Hering de Queiroz.

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## Teaching Experience

- 2013 **Graduate Teaching Assistant, Modelling and Control of Automated Systems**, Federal  
University of Santa Catarina (UFSC), Florianópolis, Brazil.

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## Presentations / Events Participation

- 2023 **Virtual Talk Series on Discrete Event Systems 2023**, organised by IEEE CSS TC DES.  
PhD Forum Invited Talk
- 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 – founda-  
tions and recent advances”**, Noordwijk, The Netherlands, June 27–30.  
Poster presentation and school attendance
- 2015 **Participation in the XII Brazilian Symposium on Intelligent Automation (XII SBAI)**,  
Natal, Brazil.  
Paper presentation and conference attendance

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## Awards

- 2022 **Best Student Paper Award**      *16th International Workshop on Discrete Event Systems  
(WODES'22)*

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## Languages

Portuguese	<b>Mother tongue</b>
English	<b>Proficient</b>
French	<b>Intermediate reading and listening, low intermediate speaking and writing</b>
German	<b>Basic</b>