

# 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: *Study on the Dynamics of Gene Regulatory Networks which Exhibit Circadian Cycles* ([link](#))  
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: *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

- 2023 **A. M. Mainhardt and A. K. Schmuck**, “*Synthesis of Decentralised Supervisory Control via Contract Negotiation*”, journal version under review ([preprint](#)).
- 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 (original, [extended version](#)).
- 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 ([link](#)).
- 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.

Kaiserslautern, Germany

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

1/2

- 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.
- 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.

---

## Teaching Experience

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

---

## Presentations / Events Participation

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

---

## Awards

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

---

## Languages

- Portuguese **Mothertongue**
- English **Proficient**
- French **Intermediate reading and listening, low intermediate speaking and writing**
- German **Basic**