

# Dr. Martin Zimmermann

## Curriculum Vitae

### Professional Contact

Mail:  
Reactive Systems Group  
Universität des Saarlandes  
66123 Saarbrücken  
Germany  
Office: Saarland Informatics Campus, Building E 1 1, Room 1.13  
Phone: +49 681 302 5667  
Email: [zimmermann@react.uni-saarland.de](mailto:zimmermann@react.uni-saarland.de)  
URL: [www.react.uni-saarland.de/people/zimmermann.html](http://www.react.uni-saarland.de/people/zimmermann.html)

### Employment

<b>Saarland University</b> Postdoc	May 2013 - present
<b>University of Warsaw</b> Postdoc	February 2012 - April 2013
<b>RWTH Aachen University</b> Research Assistant	February 2009 - January 2012

### Education

<b>RWTH Aachen University</b> PhD Student Thesis: Solving Infinite Games with Bounds Adviser: Wolfgang Thomas	February 2009 - January 2012
<b>RWTH Aachen University</b> Diploma in Computer Science Minor in Business Administration Thesis: Time-optimal Winning Strategies in Infinite Games Adviser: Wolfgang Thomas	September 2003 - January 2009

### Awards and Scholarships

<b>Springorum Medal</b> Awarded for diploma with distinction at RWTH Aachen University	2010
<b>Fulbright Scholarship</b> DePaul University, Chicago, IL GPA (through one year): 4.0	September 2007 - June 2008

### Grants

<b>DFG Project “Tradeoffs in Controller Synthesis”</b> Principal Investigator Grant covers salary and travel for PI and one PhD student	January 2015 - December 2017
---	------------------------------

<b>Activities</b>	<b>TIME 2017</b> PC member	
<b>Events</b>	<b>Workshop “Algorithmic Verification of Real-time Systems”</b> Invited Speaker	December 2016
	<b>Workshop “Automata, Concurrency and Timed Systems”</b> Invited Speaker	February 2015
	<b>Dagstuhl Seminar “Non-Zero-Sum-Games and Control”</b> Invited Participant	February 2015
<b>Publications</b>	All papers are available on my homepage.	
<b>Under Submission</b>	<b>Team Semantics for the Specification and Verification of Hyperproperties</b> Andreas Krebs, Arne Meier, and Jonni Virtema, and Martin Zimmermann arXiv:1709.08510  <b>Synthesizing Optimally Resilient Controllers</b> Daniel Neider, Alexander Weinert, and Martin Zimmermann arXiv:1709.04854  <b>Distributed Synthesis for Parameterized Temporal Logics</b> Swen Jacobs, Leander Tentrup, and Martin Zimmermann arXiv:1705.08112 (Journal version)  <b>Visibly Linear Dynamic Logic</b> Alexander Weinert and Martin Zimmermann arXiv:1512.05177 (Journal version)	
<b>To Appear</b>	<b>The Complexity of Counting Models of Linear-time Temporal Logic</b> Hazem Torfah and Martin Zimmermann <i>Acta Informatica</i> (arXiv:1408.5752)  <b>Parameterized Linear Temporal Logics Meet Costs: Still not Costlier than LTL</b> Martin Zimmermann <i>Acta Informatica</i> (Special Issue GandALF 2015) (arXiv:1505.06953)	
<b>Journal Papers</b>	<b>Easy to Win, Hard to Master: Optimal Strategies in Parity Games with Costs</b> Alexander Weinert and Martin Zimmermann <i>Logical Methods in Computer Science</i> , 13(3), 2017  <b>Parametric Linear Dynamic Logic</b> Peter Faymonville and Martin Zimmermann <i>Information and Computation</i> (Special Issue GandALF 2014), 253(3), 2017  <b>Delay Games with WMSO+U Winning Conditions</b> Martin Zimmermann <i>RAIRO ITA</i> , 50(2), 2016	

**How Much Lookahead is Needed to Win Infinite Games?**

Felix Klein and Martin Zimmermann

*Logical Methods in Computer Science*, 12(3), 2016

**Optimal Strategy Synthesis for Request-Response Games**

Florian Horn, Wolfgang Thomas, Nico Wallmeier, and Martin Zimmermann

*RAIRO ITA*, 49(3), 2015

**Down the Borel Hierarchy: Solving Muller Games via Safety Games**

Daniel Neider, Roman Rabinovich, and Martin Zimmermann

*Theoretical Computer Science* (Special Issue GandALF 2012), 560, 2014

**Parity and Streett Games with Costs**

Nathanaël Fijalkow and Martin Zimmermann

*Logical Methods in Computer Science*, 10(2), 2014

**Optimal Bounds in Parametric LTL Games**

Martin Zimmermann

*Theoretical Computer Science* (Special Issue GandALF 2011), 493, 2013

**Playing Muller Games in a Hurry**

John Fearnley and Martin Zimmermann

*International Journal of Foundations of Computer Science* (Special Issue GandALF 2010), 23(3), 2012

**Conference Papers**

**Finite-state Strategies in Delay Games**

Martin Zimmermann

In *Proceedings of GandALF 2017*, volume 256 of EPTCS, 2017

**Games with Costs and Delays**

Martin Zimmermann

In *Proceedings of LICS 2017*, IEEE Computer Society, 2017

**Bounding Average-energy Games**

Patricia Bouyer, Piotr Hofman, Nicolas Markey, Mickael Randour, and Martin Zimmermann

In *Proceedings of FOSSACS 2017*, volume 10203 of LNCS, 2017

**The First-Order Logic of Hyperproperties**

Bernd Finkbeiner and Martin Zimmermann

In *Proceedings of STACS 2017*, volume 66 of LIPIcs, 2017

**Prompt Delay**

Felix Klein and Martin Zimmermann

In *Proceedings of FSTTCS 2016*, volume 65 of LIPIcs, 2016

**Visibly Linear Dynamic Logic**

Alexander Weinert and Martin Zimmermann

In *Proceedings of FSTTCS 2016*, volume 65 of LIPIcs, 2016

**Limit your Consumption! Finding Bounds in Average-energy Games**

Kim G. Larsen, Simon Laursen, and Martin Zimmermann

In *Proceedings of QAPL 2016*, volume 227 of EPTCS, 2016

**Approximating Optimal Bounds in Prompt-LTL Realizability in Doubly-exponential Time**

Leander Tentrup, Alexander Weinert, and Martin Zimmermann  
In *Proceedings of GandALF 2016*, volume 226 of *EPTCS*, 2016

**Distributed PROMPT-LTL Synthesis**

Swen Jacobs, Leander Tentrup, and Martin Zimmermann  
In *Proceedings of GandALF 2016*, volume 226 of *EPTCS*, 2016

**Easy to Win, Hard to Master: Optimal Strategies in Parity Games with Costs**

Alexander Weinert and Martin Zimmermann  
In *Proceedings of CSL 2016*, volume 62 of *LIPICs*, 2016

**Parameterized Linear Temporal Logics Meet Costs: Still not Costlier than LTL**

Martin Zimmermann  
In *Proceedings of GandALF 2015*, volume 193 of *EPTCS*, 2015

**What are Strategies in Delay Games? Borel Determinacy for Games with Lookahead**

Felix Klein and Martin Zimmermann  
In *Proceedings of CSL 2015*, volume 41 of *LIPICs*, 2015

**Delay Games with WMSO+U Winning Conditions**

Martin Zimmermann  
In *Proceedings of CSR 2015*, volume 9139 of *LNCS*, 2015

**How Much Lookahead is Needed to Win Infinite Games?**

Felix Klein and Martin Zimmermann  
In *Proceedings of ICALP 2015, part II*, volume 9135 of *LNCS*, 2015

**The Complexity of Counting Models of Linear-time Temporal Logic**

Hazem Torfah and Martin Zimmermann  
In *Proceedings of FSTTCS 2014*, volume 29 of *LIPICs*, 2014

**Parametric Linear Dynamic Logic**

Peter Faymonville and Martin Zimmermann  
In *Proceedings of GandALF 2014*, volume 161 of *EPTCS*, 2014

**Cost-Parity and Cost-Streett Games**

Nathanaël Fijalkow and Martin Zimmermann  
In *Proceedings of FSTTCS 2012*, volume 18 of *LIPICs*, 2012

**Playing Pushdown Parity Games in a Hurry**

Wladimir Fridman and Martin Zimmermann  
In *Proceedings of GandALF 2012*, volume 96 of *EPTCS*, 2012

**Down the Borel Hierarchy: Solving Muller Games via Safety Games**

Daniel Neider, Roman Rabinovich, and Martin Zimmermann  
In *Proceedings of GandALF 2012*, volume 96 of *EPTCS*, 2012

**Degrees of Lookahead in Context-free Infinite Games**

Wladimir Fridman, Christof Löding, and Martin Zimmermann  
In *Proceedings of CSL 2011*, volume 12 of *LIPICs*, 2011

**Optimal Bounds in Parametric LTL Games**

Martin Zimmermann  
In *Proceedings of GandALF 2011*, volume 54 of *EPTCS*, 2011

**Playing Muller Games in a Hurry**  
John Fearnley and Martin Zimmermann  
In *Proceedings of GandALF 2010*, volume 25 of *EPTCS*, 2010

**Time-optimal Winning Strategies for Poset Games**  
Martin Zimmermann  
In *Proceedings of CIAA 2009*, volume 5642 of *LNCS*, 2009

## Theses

**Solving Infinite Games with Bounds**  
PhD Thesis, RWTH Aachen University, 2012

**Time-optimal Winning Strategies in Infinite Games**  
Diploma Thesis, RWTH Aachen University, 2009

## Talks

Slides are available on my homepage.

**Finite-state Strategies in Delay Games** GandALF 2017

**The First-order Logic of Hyperproperties** Centre Fédéré en Vérification (Brussels) 2017, RWTH Aachen University 2017, STACS 2017, Leibniz University Hannover 2017, Highlights 2017

**Easy to Win, Hard to Master: Playing Parity Games with Costs Optimally** AVerTS 2016, University of Liverpool 2017

**Prompt Delay** FSTTCS 2016

**Distributed Prompt-LTL Synthesis** GandALF 2016

**Visibly Linear Dynamic Logic** Highlights 2016, FSTTCS 2016

**Approximating Optimal Bounds in Prompt-LTL Realizability in Doubly-exponential Time** QAPL 2016

**Limit your Consumption! Finding Bounds in Average-energy Games** QAPL 2016

**Unbounded Lookahead in WMSO+U Games** University of Warsaw 2015

**Parameterized Linear Temporal Logics Meet Costs: Still not Costlier than LTL** GandALF 2015

**What are Strategies in Delay Games? Borel Determinacy for Games with Lookahead** CSL 2015

**Delay Games with WMSO+U Winning Conditions** Dagstuhl 2015, Avacs Meeting 2015, CSR 2015, Highlights 2015

**Parametric Linear Temporal Logics** Aalborg 2015

**Infinite Games** University of Oldenburg 2014 (invited)

**Optimal Strategy Synthesis for Request-Response Games** AVACS Meeting 2014

**The Complexity of Counting Models of Linear-time Temporal Logic** Highlights 2014, RWTH Aachen University 2015

**How much Lookahead is Needed to Win Infinite Games?** Algosyn/PUMA Meeting 2014, ACTS 2015, Aalborg University 2015

**Cost-Parity and Cost-Streett Games** RWTH Aachen University 2012, TU München 2013, Saarland University 2013

**Playing Pushdown Parity Games in a Hurry** AISS 2012, GandALF 2012, Games 2012

**Down the Borel Hierarchy Solving Muller Games via Safety Games** University of Warsaw 2011, Algosyn Workshop 2011, Gasics Meeting 2011, LICS 2012, AVACS Meeting 2014

**Degrees of Lookahead in Context-free Infinite Games** AlMoTh 2011, Gasics Meeting 2011, Games 2011

**Playing Muller Games in a Hurry** Gasics Meeting 2010, GandALF 2010, MoVeP 2010, Games 2010

**Time-optimal Strategies for Infinite Games** Warwick University 2010

**Optimal Bounds in Parametric LTL Games** Games 2009, Gasics Meeting 2009, AlMoTh 2010, Gasics Meeting 2010, GandALF 2011, AVACS Meeting 2013

**Time-optimal Winning Strategies for Poset Games** Gasics Meeting 2009, CIAA 2009

## Academic Visits

**Aalborg University** (three weeks) August 2015  
Host: Kim G. Larsen

**University of Warwick** (six weeks) March 2010 - April 2010  
Host: Marcin Jurdziński

## Advising

Alexander Weinert (PhD student) 2015 - present

Moritz Lichter (research immersion lab) 2017

Tobias Salzmann (master thesis) 2015

## Teaching

Saarland University

Lecture **Infinite Games** Summer 2016

Lecture **Recursion Theory** Summer 2015

Seminar **Advanced Topics in Infinite Games** Summer 2014  
(co-taught with B. Finkbeiner)

Lecture **Infinite Games** Winter 2013/14

Lecture **Verification** (co-taught with B. Finkbeiner) Summer 2013

RWTH Aachen University

Seminar on **Automata Theory** (advised three students) Winter 2011/12

Problem classes for lecture **Applied Automata Theory** (with J. Olschewski) Summer 2011

Lab Course **Web Programming for Mathematicians** (with I. Felscher) Summer 2011

Seminar on **Automata Theory** (advised two students) Winter 2010/11

Lab course **Web Programming and LaTeX** (with I. Felscher) Winter 2010/11

Seminar on <b>Automata Theory</b> (advised one student)	Summer 2010
Lab course <b>Web Programming for Mathematicians</b> (with I. Felscher)	Summer 2010
Problem classes for lecture <b>Regular and Context-Free Languages: Advanced Results</b>	Winter 2009/10
Seminar on <b>Automata Theory</b> (advised one student)	Winter 2009/10
Lab course <b>Web Programming and LaTeX</b> (with I. Felscher)	Winter 2009/10
Seminar on <b>Automata Theory</b> (advised two students)	Summer 2009

**PhD  
Committees**

Hassan Hatefi Ardakani (Saarland University)	December 2016
Rayna Dimitrova (Saarland University)	June 2014
Rüdiger Ehlers (Saarland University)	October 2013

**Reviewing**

RP 2009, LPAR 2010, MFCS 2010, JCSS, LICS 2010, LATA 2010, FSTTCS 2010, CSL 2011, FSTTCS 2011, LICS 2013, ICALP 2013, TIME 2013, SICOMP, STACS 2014, TACAS 2014, FOSSACS 2014, I&C, CAV 2014, LMCS, YuriFest 2015, STACS 2015, LICS 2016, ATVA 2016, ESOP 2017, TCS

Reviewer for Mathematical Reviews.

October 25, 2017