

Dr. Martin Zimmermann

Curriculum Vitae

Professional Contact

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Employment

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

Education

RWTH Aachen University PhD Student Thesis: Solving Infinite Games with Bounds Adviser: Wolfgang Thomas	February 2009 - January 2012
RWTH Aachen University 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

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

Grants

DFG Project “Tradeoffs in Controller Synthesis” Principal Investigator Grant covers salary and travel for PI and one PhD student	January 2015 - September 2018
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Activities	GandALF 2017 PC co-chair and organizing chair	
	Highlights of Logic, Games, and Automata 2018 PC member	
	TIME 2017 PC member	
Events	Workshop “Algorithmic Verification of Real-time Systems” Invited Speaker	December 2016
	Workshop “Automata, Concurrency and Timed Systems” Invited Speaker	February 2015
	Dagstuhl Seminar “Non-Zero-Sum-Games and Control” Invited Participant	February 2015
Publications	All papers are available on my homepage.	
To Appear	<p>Visibly Linear Dynamic Logic Alexander Weinert and Martin Zimmermann <i>Theoretical Computer Science</i> (arXiv:1512.05177)</p> <p>Parity Games with Weights Sven Schewe, Alexander Weinert, and Martin Zimmermann CSL 2018 (arXiv:1804.06168)</p> <p>Synthesizing Optimally Resilient Controllers Daniel Neider, Alexander Weinert, and Martin Zimmermann CSL 2018 (arXiv:1709.04854)</p> <p>Parity to Safety in Polynomial Time for Pushdown and Collapsible Pushdown Systems Matthew Hague, Roland Meyer, Sebastian Muskalla, and Martin Zimmermann MFCS 2018 (arXiv:1805.02963).</p> <p>Team Semantics for the Specification and Verification of Hyperproperties Andreas Krebs, Arne Meier, and Jonni Virtema, and Martin Zimmermann MFCS 2018 (arXiv:1709.08510).</p> <p>Distributed Synthesis for Parameterized Temporal Logics Swen Jacobs, Leander Tentrup, and Martin Zimmermann <i>Information and Computation</i> (arXiv:1705.08112).</p>	
Journal Papers	The Complexity of Counting Models of Linear-time Temporal Logic Hazem Torfah and Martin Zimmermann <i>Acta Informatica</i> 55(3)	
	Parameterized Linear Temporal Logics Meet Costs: Still not Costlier than LTL Martin Zimmermann <i>Acta Informatica</i> (Special Issue GandALF 2015), 55(2)	

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

Alexander Weinert and Martin Zimmermann
Logical Methods in Computer Science, 13(3), 2017

Parametric Linear Dynamic Logic

Peter Faymonville and Martin Zimmermann
Information and Computation (Special Issue GandALF 2014), 253(3), 2017

Delay Games with WMSO+U Winning Conditions

Martin Zimmermann
RAIRO ITA, 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, University of Napoli 2018

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

University of Naples (two weeks) Host: Aniello Murano	March 2018
Aalborg University (three weeks) Host: Kim G. Larsen	August 2015
University of Warwick (six weeks) Host: Marcin Jurdziński	March 2010 - April 2010

Advising

Alexander Weinert (PhD student)	2015 - present
Moritz Lichter (research immersion lab)	2017
Tobias Salzmann (master thesis)	2015

Teaching Saarland University

Lecture Reactive Synthesis (co-taught with S. Jacobs)	Winter 2017/18
Lecture Infinite Games	Summer 2016
Lecture Recursion Theory	Summer 2015
Seminar Advanced Topics in Infinite Games (co-taught with B. Finkbeiner)	Summer 2014
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 Automata Theory (advised one student)	Summer 2010
	Lab course Web Programming for Mathematicians (with I. Felscher)	Summer 2010
	Problem classes for lecture	
	Regular and Context-Free Languages: Advanced Results	Winter 2009/10
	Seminar on Automata Theory (advised one student)	Winter 2009/10
	Lab course Web Programming and LaTeX (with I. Felscher)	Winter 2009/10
	Seminar on Automata Theory (advised two students)	Summer 2009

PhD Committees	Alexander Wieder (Saarland University)	November 2017
	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, STACS 2018, FOSSACS 2018, MFCS 2018.

Reviewer for Mathematical Reviews.

June 15, 2018