Dr. Martin Zimmermann

Curriculum Vitae

Professional Contact

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Reactive Systems Group
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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

Activities

GandALF 2018
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"   December 2016
Invited Speaker

Workshop "Automata, Concurrency and Timed Systems"   February 2015
Invited Speaker

Dagstuhl Seminar "Non-Zero-Sum-Games and Control"   February 2015
Invited Participant

Publications

All papers are available on my homepage.

Under Submission

Robust, Expressive, and Quantitative Linear Temporal Logics
Daniel Neider, Alexander Weinert, and Martin Zimmermann
arXiv:1808.09028

Robust Monitoring of Linear Temporal Properties
Daniel Neider, Maximilian Schwenger, Paulo Tabuada, Alexander Weinert, and Martin
Zimmermann
arXiv:1807.08203

Finite-state Strategies in Delay Games
Sarah Winter and Martin Zimmermann
arXiv:1704.08887

To Appear

Visibly Linear Dynamic Logic
Alexander Weinert and Martin Zimmermann
Theoretical Computer Science (arXiv:1512.05177)

Distributed Synthesis for Parameterized Temporal Logics
Swen Jacobs, Leander Tentrup, and Martin Zimmermann
Information and Computation (arXiv:1705.08112).

Journal Papers

The Complexity of Counting Models of Linear-time Temporal Logic
Hazem Torfah and Martin Zimmermann
Acta Informatica 55(3)

Parameterized Linear Temporal Logics Meet Costs: Still not Costlier than LTL
Martin Zimmermann
Acta Informatica (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

Parity Games with Weights
Sven Schewe, Alexander Weinert, and Martin Zimmermann
In *Proceedings of CSL 2018*, volume 119 of *LIPIcs*, 2018

Synthesizing Optimally Resilient Controllers
Daniel Neider, Alexander Weinert, and Martin Zimmermann
In *Proceedings of CSL 2018*, volume 119 of *LIPIcs*, 2018

Parity to Safety in Polynomial Time for Pushdown and Collapsible Pushdown Systems
Matthew Hague, Roland Meyer, Sebastian Muskalla, and Martin Zimmermann
In *Proceedings of MFCS 2018*, volume 117 of *LIPIcs*, 2018

Team Semantics for the Specification and Verification of Hyperproperties
Andreas Krebs, Arne Meier, and Jonni Virtema, and Martin Zimmermann
In *Proceedings of MFCS 2018*, volume 117 of *LIPIcs*, 2018

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

Tradeoffs in Infinite Games
Habilitation Thesis, Saarland University, 2018

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.

Synthesizing Optimally Resilient Strategies Highlights 2018

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	Quentin Hautem (University of Mons)	June 2018
	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.

September 20, 2018