

Michael Tautschnig

RESEARCH INTERESTS Improving software quality, model checking, testing, concurrency, SAT and constraint solvers

EDUCATION **Technische Universität München** Munich, Germany
October 2002 – April 2006
Diploma in computer science (major) and mathematics (minor) with distinction. Thesis title: Development of a tool to solve mixed logical/linear constraint problems. Thesis supervisor: Prof. Manfred Broy.

Bundesrealgymnasium Adolf-Pichler-Platz Innsbruck, Austria
September 1993 – June 2001
Secondary school finished with distinction.

PUBLICATIONS **Journal Articles and Book Chapters**
Andreas Bauer, Martin Leucker, Christian Schallhart, and Michael Tautschnig. Don't care in SMT—building flexible yet efficient abstraction/refinement solvers. *International Journal on Software Tools for Technology Transfer*, 12(1):23–37, February 2010.

Wolfgang Haberl, Michael Tautschnig, and Uwe Baumgarten. *Generating Distributed Code From COLA Models*, volume 33 of *Lecture Notes in Electrical Engineering*, chapter 20. Springer, March 2009.

Wolfgang Haberl, Michael Tautschnig, and Uwe Baumgarten. From COLA Models to Distributed Embedded Systems Code. *IAENG International Journal of Computer Science*, 35(3):427–437, September 2008.

Refereed Conference and Workshop Papers
Andreas Holzer, Visar Januzaj, Stefan Kugele, Boris Langer, Christian Schallhart, Michael Tautschnig, and Helmut Veith. Seamless testing for models and code. In *FASE 2011*, 2011. To appear.

Andreas Holzer, Christian Schallhart, Michael Tautschnig, and Helmut Veith. An introduction to test specification in FQL. In Sharon Barner, Daniel Kroening, and Orna Raz, editors, *Proceedings of Haifa Verification Conference (HVC 2010)*, volume 6504 of *Lecture Notes in Computer Science*, pages 9–22. Springer, 2011. To appear.

Wolfgang Haberl, Markus Herrmannsdoerfer, Stefan Kugele, Michael Tautschnig, and Martin Wechs. Seamless model-driven development put into practice. In Tiziana Margaria and Bernhard Steffen, editors, *Proceedings of 4th International Symposium on Leveraging Applications (ISoLA 2010)*, volume 6415 of *Lecture Notes in Computer Science*, pages 18–32, Heraklion, Crete, Greece, October 2010. Springer.

Andreas Holzer, Visar Januzaj, Stefan Kugele, and Michael Tautschnig. Timely time estimates. In Tiziana Margaria and Bernhard Steffen, editors, *Proceedings of 4th International Symposium on Leveraging Applications (ISoLA 2010)*, volume 6415 of *Lecture Notes in Computer Science*, pages 33–46, Heraklion, Crete, Greece, October 2010. Springer.

Andreas Holzer, Christian Schallhart, Michael Tautschnig, and Helmut Veith. How did you specify your test suite? In *Proceedings of the 25th IEEE/ACM International Conference on Automated Software Engineering (ASE 2010)*, pages 407–416, Antwerp, Belgium, September 2010. ACM.

Wolfgang Haberl, Markus Herrmannsdoerfer, Stefan Kugele, Michael Tautschnig, and Martin Wechs. One click from model to reality. In *Proceedings of Symposium on Automotive/Avionics Systems Engineering (SAASE 2009)*, 2009.

Hermann Gruber, Markus Holzer, and Michael Tautschnig. Short regular expressions from finite automata: Empirical results. In *Proceedings of the 14th International Conference on Implementation and Application of Automata (CIAA 2009)*, volume 5642 of *Lecture Notes in Computer Science*, pages 188–197, Sydney, Australia, July 2009. Springer.

Andreas Holzer, Christian Schallhart, Michael Tautschnig, and Helmut Veith. Query-driven program testing. In *Proceedings of the Tenth International Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI 2009)*, volume 5403 of *Lecture Notes in Computer Science*, pages 151–166, Savannah, GA, USA, January 2009. Springer.

Boris Langer and Michael Tautschnig. Navigating the requirements jungle. In *Leveraging Applications of Formal Methods, Verification and Validation*, volume 17 of *Communications in Computer and Information Science*, pages 354–368, Porto Sani, Greece, October 2008. Springer.

Stefan Kugele, Wolfgang Haberl, Michael Tautschnig, and Martin Wechs. Optimizing automatic deployment using non-functional requirement annotations. In *Leveraging Applications of Formal Methods, Verification and Validation*, volume 17 of *Communications in Computer and Information Science*, pages 400–414, Porto Sani, Greece, October 2008. Springer.

Zhonglei Wang, Andreas Herkersdorf, Stefano Merenda, and Michael Tautschnig. A model driven development approach for implementing reactive systems in hardware. In *Forum on Specification and Design Languages (FDL08)*, pages 197–202, Stuttgart, Germany, September 2008. IEEE Computer Society.

Andreas Holzer, Christian Schallhart, Michael Tautschnig, and Helmut Veith. FShell: Systematic Test Case Generation for Dynamic Analysis and Measurement. In *Proceedings of the 20th International Conference on Computer Aided Verification (CAV 2008)*, volume 5123 of *Lecture Notes in Computer Science*, pages 209–213, Princeton, NJ, USA, July 2008. Springer.

Zhonglei Wang, Wolfgang Haberl, Stefan Kugele, and Michael Tautschnig. Automatic Generation of SystemC Models from Component-based Designs for Early Design Validation and Performance Analysis. In *WOSP '08: Proceedings of the 7th International Workshop on Software and Performance*, pages 139–144, Princeton, NJ, USA, June 2008. ACM.

Sven Bunte and Michael Tautschnig. A Benchmarking Suite for Measurement-Based WCET Analysis Tools. In *International Conference on Software Testing Verification and Validation Workshop (ICSTW'08)*, pages 353–356, Lillehammer, Norway, April 2008. IEEE Computer Society Press.

Wolfgang Haberl, Michael Tautschnig, and Uwe Baumgarten. Running COLA on Embedded Systems. In *Proceedings of The International MultiConference of Engineers and Computer Scientists 2008*, pages 922–928, Hongkong, China, March 2008.

Andreas Bauer, Martin Leucker, Christian Schallhart, and Michael Tautschnig. Don't care in SMT—building flexible yet efficient abstraction/refinement solvers. In *Proceedings of the 2007 ISoLA Workshop On Leveraging Applications of Formal Methods, Verification and Validation (ISoLA)*, pages 135–146, Poitiers, France, December 2007.

Christian Kühnel, Andreas Bauer, and Michael Tautschnig. Compatibility and reuse in component-based systems via type and unit inference. In *Proceedings of the 33rd EUROMICRO Conference on Software Engineering and Advanced Applications (SEAA)*, pages 101–108, Lübeck, Germany, August 2007. IEEE Computer Society Press.

Andreas Bauer, Markus Pister, and Michael Tautschnig. Tool-support for the analysis of hybrid systems and models. In *Proceedings of the 2007 Conference on Design, Automation and Test in Europe (DATE)*, pages 924–929, Nice, France, April 2007. European Design and Automation Association.

Technical reports

This list does not include technical reports the titles of which coincide with publications listed in the above categories.

Stefan Kugele, Michael Tautschnig, Andreas Bauer, Christian Schallhart, Stefano Merenda, Wolfgang Haberl, Christian Kühnel, Florian Müller, Zhonglei Wang, Doris Wild, Sabine Rittmann, and Martin Wechs. COLA – the component language. Technical Report TUM-I0714, Institut für Informatik, Technische Universität München, September 2007.

Talks

Several talks at conferences with published proceedings (see above).

Michael Tautschnig. FQL: A Query Language for Program Testing. Joint meeting of Quality Software Engineering and FORSYTE groups, March 2010.

Michael Tautschnig. FQL: A Query Language for Program Testing. IST / TU Rigorous Systems Engineering Seminar, March 2010.

Michael Tautschnig. Tools for Concurrency and Distributed Systems. RiSE Workshop, February 2010.

Michael Tautschnig. FQL: A Query Language for Program Testing. Joint meeting of Tom Henzinger's group and FORSYTE, January 2010.

Michael Tautschnig. FQL: A Query Language for Program Testing. 15. Kolloquium Programmiersprachen und Grundlagen der Programmierung (KPS'09), October 2009.

Michael Tautschnig. Query-Driven Program Testing. Joint meeting of groups from Oxford, ETH Zürich, and FORSYTE, April 2009.

Michael Tautschnig. FShell: Systematic Test Case Generation for Dynamic Analysis and Measurement. Alpine Verification Meeting, May 2008.

Michael Tautschnig. Satisfiability Modulo Theories: ABSolver. Joint meeting DTU-TUM, May 2007.

Theses

Michael Tautschnig. Development of a tool to solve mixed logical/linear constraint problems. Diploma thesis, Technische Universität München, February 2006.

UNIVERSITY ACTIVITIES	Winter Term 2010	<i>Tutor</i>
	Exercises of the course on <i>formal methods in computer science</i>	
	Summer Term 2010	<i>Tutor</i>
	Lab course <i>Computer Aided Verification</i>	
	Winter Term 2009	<i>Tutor</i>
	Exercises of the course on <i>efficient decision procedures</i> ; Seminar <i>Software Validation</i>	
	Winter Term 2009	<i>Supervisor</i>
	Bachelor Thesis: Latinka Pavlova. <i>Automated Security Analysis of PAM using CBMC</i> .	
	Summer Term 2009	<i>Tutor</i>
	Exercises of the course on <i>automated methods in software engineering</i> ; Seminar <i>Software Validation</i>	
Winter Term 2008	<i>Tutor</i>	
Exercises of the course on <i>efficient decision procedures</i> ; Lab course <i>Program- and Model Analysis</i> ; Seminar <i>Software Validation</i>		
Winter Term 2007	<i>Supervisor</i>	
Diploma Thesis: Patrick Drude. <i>Solving Sat Modulo Theory Problems with Fourier-Motzkin Elimination</i> .		
Winter Term 2007	<i>Tutor</i>	
Exercises of the course on <i>automata, formal languages and computability</i> ; Lab courses <i>Game Playing</i> and <i>Lego Mindstorms</i> ; Seminar <i>Software Validation</i>		
Summer Term 2007	<i>Tutor</i>	
Exercises of the course on <i>model checking</i> ; Lab courses <i>Game Playing</i> and <i>Lego Mindstorms</i>		
Winter Term 2006	<i>Tutor</i>	
Exercises of the course on <i>automata, formal languages and computability</i>		
Summer Term 2006	<i>Tutor</i>	
Lab course <i>Game Playing</i>		
Summer Term 2003 – Summer Term 2006	<i>Tutor</i>	
Lab course <i>Lego Mindstorms</i>		
PROFESSIONAL ACTIVITIES	Program Committee	
	5 th International Computer Science Symposium in Russia (CSR), 2010.	
	Conference Referee	
	Symposium on Theoretical Aspects of Computer Science (STACS), 2011; Design, Automation & Test in Europe (DATE), 2011; Haifa Verification Conference (HVC), 2010; Computation Tools, 2010; 31 st IEEE Real-Time Systems Symposium (RTSS), 2010; Formal Methods in Computer Aided Design (FMCAD), 2010; 7 th International Colloquium on Theoretical Aspects of Computing (ICTAC), 2010; 22 nd International Conference on Computer Aided Verification (CAV), 2010; 5 th International Computer Science Symposium in Russia (CSR), 2010; Formal Methods in Computer Aided Design (FMCAD), 2009; 6 th International Conference on Quantitative Evaluation of Systems (QEST), 2009; 21 st International Conference on Computer Aided Verification (CAV), 2009; International Symposium On Leveraging Applications of Formal Methods, Verification and Validation (ISoLA),	

2008; 1st International Conference on Language and Automata Theory and Applications (LATA), 2007; 34th International Colloquium on Automata, Languages and Programming (ICALP), 2007; 2nd International Computer Science Symposium in Russia (CSR), 2007.

Simon Fraser University

Vancouver, Canada

Research collaboration with Prof. Dirk Beyer

Internship

November 2008 – December 2008

Technische Universität Wien,

Arbeitsbereich FORSYTE

Vienna, Austria

Ph.D. student in the group of Prof. Helmut Veith. Key researcher in BMWI grant 20H0804B in the frame of LuFo IV-2 project INTECO in collaboration with Diehl Aerospace.

Research assistant

since January 2010

Technische Universität Darmstadt,

FG FORSYTE

Darmstadt, Germany

Supervision of Stefan Wilke (trainee as “Fachinformatiker/Systemintegration”)

Supervision of trainee

April 2009 – December 2009

Technische Universität Darmstadt,

FG FORSYTE

Darmstadt, Germany

Ph.D. student in the group of Prof. Helmut Veith. Key researcher in DFG grant FORTAS – Formal Timing Analysis Suite for Real Time Programs (VE 455/1-1); key researcher in BMWI grant 20H0804B in the frame of LuFo IV-2 project INTECO in collaboration with Diehl Aerospace.

Research assistant

March 2008 – December 2009

Technische Universität München, I7

Munich, Germany

Ph.D. student in the group of Prof. Helmut Veith. Key researcher in research collaboration with BMW; key researcher in DFG grant FORTAS – Formal Timing Analysis Suite for Real Time Programs (VE 455/1-1).

Research assistant

May 2006 – February 2008

Technische Universität München, I7

Munich, Germany

System design and maintenance

System Administrator

January 2003 – March 2006

Plandata DatenverarbeitungsgesmbH

Innsbruck, Vienna, Austria

Munich, Germany

First level support

System Administrator

July – August 2000, July – December 2001

**SOFTWARE
PROJECTS**

FShell

Developer

<http://code.forsyte.de/fshell>

CPAchecker

Contributing developer

<http://www.sosy-lab.org/~dbeyer/CPAchecker>

Hessen Automata Library

Developer

<http://code.forsyte.de/automata>

ABSolver

Developer

<http://absolver.sf.net>

Diagnostics – Logging, unit testing, and runtime diagnostics for C++

<http://code.forsyte.de/diagnostics>

Contributing developer

Fully Automatic Installation (FAI)
Contributing developer

<http://www.informatik.uni-koeln.de/fai>

Debian/GNU Linux
Debian Developer

<http://www.debian.org>

OTHER

Languages

German (native language), English (fluent), Italian (intermediate)

Computing

Programming Languages: C++, C, Java, Unix Shell Scripts, Perl, Makefiles, PHP, SQL, x86 Assembly; *Operating Systems:* Linux, Apple Mac OS X, Microsoft Windows, Novell Netware; *Revision Control:* Git, Subversion, CVS

Michael Tautschnig December 21, 2010