

Software Consultant  
Munich, Germany

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GitHub: [github.com/fhinkel](https://github.com/fhinkel)

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**TNG Technology Consulting GmbH, Unterföhring, Germany**

**Software Consultant**, since September 2013

Media and Telecommunication Service Provider:

- Refactoring frontend and business logic (PHP)
- Contributing to rules engine (PHP) based on Rete Algorithm
- Conception and development of REST client (PHP)
- Coordinating product department, QA, and external agencies for planning and development of monthly releases
- Testdriven development with PHPUnit, object oriented programming with PHP 5.3 and PHP 5.5, Composer, Phing, PhpStorm
- Setup continuous integration pipeline with Jenkins
- Development of acceptance tests in JUnit for product information service (Java)
- Contributing to REST service for external partners (Zend Framework)

Real Estate Startup:

- Supervising student trainee
- Frontend: Angular, Backend: Node.js and MongoDB

Co-organizer PHP Usergroup Munich

- Bimonthly meetings
- 400 members

Conducting job interviews

**Mathematical Biosciences Institute, Ohio State University, OH**

**Postdoctoral Fellow**, 2011-2013

Mentor: Michael Stillman, Cornell University

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EDUCATION

**Virginia Tech, Blacksburg, VA**

**Ph.D. Mathematics**, August 2011

Reinhard Laubenbacher (Virginia Bioinformatics Institute), Advisor  
*Algebraic theory for discrete models in systems biology*

**M.S. Mathematics**, May 2007

**Universität Karlsruhe, Karlsruhe, Germany**

**Vordiplom Mathematik**, minor **Computer Science**, May 2006

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OPENSOURCE CONTRIBUTIONS Main contributor to BlitzPay, a cryptocurrency based payment app. Winner at Burda Hackathon *Future of Finance* of the special prize for the highest economic impact by the Bavarian Ministry of Economic Affairs and Media, Energy and Technology, 2015

Main contributor to open source project in Node.js: Web interface for research tool for algebraic geometry, used in courses at Harvard, Cornell, and UC Berkeley, [web.macaulay2.com](http://web.macaulay2.com)

Contributor to [Mockery](#), PHP mock object framework, 2014

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PUBLICATIONS *A Web Application for Macaulay2*, L. Kastner, **F. Hinkelmann**, M. Stillman, 2015, under review

*Steady state analysis of Boolean molecular network models via model reduction and computational algebra*, A. Veliz-Cuba, B. Aguilar, **F. Hinkelmann**, R. Laubenbacher, BMC Bioinformatics, 2014, DOI: 10.1186/1471-2105-15-221

*Inferring Biologically Relevant Models: Nested Canalyzing Functions*, **F. Hinkelmann**, A. Jarrah, ISRN Biomathematics, 2012, DOI: 10.5402/2012/613174

*ADAM: Analysis of Discrete Models of Biological Systems Using Computer Algebra*, **F. Hinkelmann**, M. Brandon, B. Guang, R. McNeill, G. Blekherman, A. Veliz-Cuba, R. Laubenbacher, BMC Bioinformatics, 2011, DOI: 10.1186/1471-2105-12-295

*Fast Gröbner Basis Computation for Boolean Polynomials*, **F. Hinkelmann**, E. Arnold, 2010, arXiv.org

*A Mathematical Framework for Agent Based Models of Complex Biological Networks*, **F. Hinkelmann**, D. Murrugarra, A. Jarrah, R. Laubenbacher, Bulletin of Mathematical Biology, 2010, DOI: 10.1007/s11538-010-9582-8

*Parameter estimation for Boolean models of biological networks*, E. Dimitrova, L. García-Puente, **F. Hinkelmann**, A. Jarrah, R. Laubenbacher, B. Stigler, M. Stillman, P. Vera-Licona, Journal of Theoretical Computer Science, April 2010, DOI: 10.1016/j.tcs.2010.04.034

*Boolean Models of Bistable Biological Systems*, **F. Hinkelmann**, R. Laubenbacher, Journal of Discrete and Continuous Dynamical Systems - Series S (DCDS-S) 4-6 December 2011 special issue on Biomathematics, DOI: 10.3934/dcdss.2011.4.1443

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BOOK CHAPTERS *Algebraic models and their use in systems biology*, R. Laubenbacher, **F. Hinkelmann**, D. Murrugarra, A. Veliz-Cuba, Discrete and Topological Models in Molecular Biology, edited by Natasa Jonoska and Masahico Saito, Springer, ISBN: 9783642401923, 2013

*Agent-based models and optimal control in biology: an algebraic approach*, **F. Hinkelmann**, M. Oremland, R. Laubenbacher, Mathematical Concepts and Methods in Modern Biology, Edited by Raina Robeva and Terrell Hodge, Elsevier, ISBN: 9780124157804, 2013

*Finite Fields in Biology*, **F. Hinkelmann**, R. Laubenbacher, Handbook on Finite Fields, edited by Gary Mullen and Daniel Panario, CRC Press, ISBN: 9781439873786, 2013

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RESEARCH GRANTS	Collaborator on NSF Award #1146819 <i>Collaborative Research: ABI Innovation: PlantSimLab: A Simulation Laboratory for Plant Biology</i> , awarded amount \$881,510, 2012
INVITED TALKS	<p><b>JSConf EU</b>, <i>JavaScript engines</i>, September 25-27, 2015, Berlin, Germany</p> <p><b>Nordic.js</b>, <i>A Trip to the Zoo (JavaScript engines)</i>, September 10-11, 2015, Stockholm, Sweden</p> <p><b>.concat()</b>, <b>the web development conference in Austria</b>, <i>Mobile Web Apps with Native App Features</i>, March 7, 2015, Salzburg, Austria</p> <p><b>PHPBenelux Conference</b>, Workshop <i>From nightmare legacy code to a professional PHP application in 3 hours</i>, January 23, 2015, Antwerp, Belgium</p>
PRESENTATIONS	<p><b>TNG Winter Retreat</b> Workshop <i>Stack machines with PHP</i>, March 13, 2015, Seefeld, Austria</p> <p><b>TNG Techday</b> Workshop <i>Spaß mit Node.js</i>, February 13, 2015, Unterföhring, Germany</p>
HONORS	<p><b>AWM Travel Award</b> AWM Workshop in conjunction with the Joint Mathematics Meeting, January 4-7, 2012, Boston, MA</p> <p><b>MBI Postdoctoral Fellow</b> 2011-2014</p> <p><b>Steenekamp Fellowship</b> 2010-2011</p> <p><b>AMS Travel Award</b> Joint Mathematics Meeting, January 13-16, 2010, San Francisco, California</p> <p><b>SACNAS Travel Scholarship</b> (Advancing Hispanics/Chicanos and Native Americans in Science), Improving the Human Condition: Challenges for Interdisciplinary Science, October 15-18, 2009, Dallas, Texas</p> <p><b>SIAM Travel Award</b> SIAM Annual Meeting, July 6-10, 2009, Denver, Colorado</p> <p><b>SIAM Student Chapter Certificate of Recognition</b> 2009, faculty advisor Lizette Zietsman</p> <p><b>SIAM Student Travel Award</b> SIAM Annual Meeting, July 7-11, 2008, San Diego, California</p> <p><b>Hatcher Fellowship</b> Summer 2008</p> <p><b>Baden-Württemberg Stipendium</b> Scholarship 2006-2007</p>
SELECTED WORKSHOPS	<p><b>Kanban Training</b>, January 24, 2014, Unterföhring, Germany</p> <p><b>Macaulay2 Workshop</b>, January 6 - 10, 2014, Berkeley, California</p>

**SQL Workshop**, December 13, 2013, Unterföhring, Germany

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ASSOCIATION  
MEMBERSHIPS

**Grace Hopper Celebration of Women in Computing Conference (GHC)**

**Poster Committee member**, 2015

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TEACHING  
EXPERIENCE

**Universität Bremen, Bremen, Germany**

**Lecturer**, August 2015

*Agile Software Development: A Node.js application in one week*

2 Credit Points (ECTS)

**Lecturer**, August 2014

*Agile Software Development: A Node.js application in one week*

2 Credit Points (ECTS)

**Virginia Tech**

**Course Instructor** - Integral Calculus, Summer 2009

- Lectured five times a week for a class of 32 undergraduate students
- Created syllabus
- Wrote and graded course exams
- Assigned grades to students

**Course Instructor** - Computer-tested Integral Calculus, Spring 2009

**Course Instructor** - Differential Calculus, Fall 2007 - Fall 2008

**Instructional Assistant**, Fall 2006

- Assisted students with math concepts and software questions

**Universität Karlsruhe**

**Numerical Analysis Programming Lab Instructor**, Spring 2006

- Instructed students once a week and graded C++ and Java exercises

**Linear Algebra and Real Analysis Recitations**, Spring 2005 - Spring 2006

- Lectured once a week for a class of 70 undergraduate students
  - Graded homework and exams
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LANGUAGES

Fluent: German (Native), English, Italian

Basic: French, Spanish

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REFERENCES     Reinhard Laubenbacher, [reinhard@vbi.vt.edu](mailto:reinhard@vbi.vt.edu), Virginia Tech, Virginia Bioinformatics Institute,  
PhD advisor

Mike Stillman, [mike@math.cornell.edu](mailto:mike@math.cornell.edu), Cornell University, Department of Mathematics