

# Andreas Haas

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## RESEARCH INTERESTS

Design and verification of concurrent data structures, memory management, virtual execution environments, inexact computing, embedded and real-time systems

## EDUCATION

<b>Ph.D. Candidate in Computer Science</b> <i>University of Salzburg, Austria</i> Ph.D. student with Prof. Christoph M. Kirsch in the field of concurrent data structures and systems engineering	<b>2009 - present</b>
<b>Dipl.-Ing. (M.Sc.)</b> <i>University of Salzburg, Austria</i> Computer Science	<b>2007 - 2009</b>
<b>Bakk.techn. (B.S.)</b> <i>University of Salzburg, Austria</i> Computer Science	<b>2004 - 2007</b>

## WORK EXPERIENCE

<b>Research Assistant</b> <i>With Prof. Christoph M. Kirsch, University of Salzburg, Austria</i> [ <a href="http://www.cs.uni-salzburg.at/~ck">http://www.cs.uni-salzburg.at/~ck</a> ] Projects: Short-term Memory: a new model for heap management; [ <a href="http://tiptoe.cs.uni-salzburg.at/short-term-memory">http://tiptoe.cs.uni-salzburg.at/short-term-memory</a> ] Scal: analysis and implementation of concurrent data structure algorithms; [ <a href="http://scal.cs.uni-salzburg.at">http://scal.cs.uni-salzburg.at</a> ]	<b>November 2009 - present</b>
<b>Visiting Researcher</b> <i>Visiting Mike Dodds, University of York, UK</i> [ <a href="http://www-users.cs.york.ac.uk/~miked">http://www-users.cs.york.ac.uk/~miked</a> ] Design, implementation, and analysis of concurrent data structure algorithms;	<b>August 2013 - September 2013</b>
<b>Intern</b> <i>Google Inc., London, UK</i> [ <a href="http://www.google.com">http://www.google.com</a> ] Implementation of advanced user interactions in the browser automation framework WebDriver;	<b>June 2011 - September 2011</b>
<b>Software Engineer</b> <i>Tecan Austria GmbH, Grödig, Austria</i> [ <a href="http://www.tecan.com">http://www.tecan.com</a> ] Main activities: software development: design and implementation of control and service software for laboratory devices;	<b>2002 - 2009</b>

## PUBLICATIONS

- [1] Mike Dodds, **Andreas Haas**, Christoph M. Kirsch - *A Scalable, Correct Time-Stamped Stack*, to appear in Proc. Symposium on Principles of Programming Languages (POPL), 2015.
- [2] Mike Dodds, **Andreas Haas**, Christoph M. Kirsch - *Fast Concurrent Data-Structures Through Explicit Timestamping*, Technical Report, 2014-03, February 2014, 38pp, University of Salzburg, Austria.
- [3] **Andreas Haas**, Thomas A. Henzinger, Christoph M. Kirsch, Michael Lippautz, Hannes Payer, Ali Sezgin, Ana Sokolova - *Distributed Queues in Shared Memory — Multicore Performance and Scalability through Quantitative Relaxation*, in Proc. International Conference on Computing Frontiers (CF), 2013.
- [4] **Andreas Haas**, Christoph M. Kirsch, Michael Lippautz, Hannes Payer - *How FIFO is your Concurrent FIFO Queue?*, in Proc. Workshop on Relaxing Synchronization for Multicore and Manycore Scalability (RACES), 2012.
- [5] Martin Aigner, **Andreas Haas**, Christoph M. Kirsch, Michael Lippautz, Ana Sokolova, Stephanie Stroka, Andreas Unterweger - *Short-term Memory for Self-collecting Mutators*, in Proc. International Symposium on Memory Management, 2011.
- [6] Martin Aigner, **Andreas Haas**, Christoph M. Kirsch, Ana Sokolova - *Short-term Memory for Self-collecting Mutators - Revised Version*, Technical Report, 2010-06, October 2010, 34pp, University of Salzburg, Austria.
- [7] Silviu S. Craciunas, **Andreas Haas**, Christoph M. Kirsch, Hannes Payer, Harald Röck, Andreas Rottmann, Ana Sokolova, Rainer Trummer, Joshua Love, Raja Sengupta - *Information-Acquisition-as-a-Service for Cyber-Physical Cloud Computing*, in Proc. Workshop on Hot Topics in Cloud Computing (HotCloud), 2010.
- [8] Martin Aigner, **Andreas Haas**, Christoph M. Kirsch, Hannes Payer, Andreas Schönegger, Ana Sokolova - *Short-term Memory for Self-collecting Mutators*, Technical Report, 2010-03, April 2010, 29pp, University of Salzburg, Austria.
- [9] **Andreas Haas** - *Expiration Classes for Implicit Memory Management*, Master Thesis, 2009, University of Salzburg, Austria.

## TALKS

- *A Scalable, Correct, Time-Stamped Stack*
  - POPL, Mumbai, India, January 2015. (25 min)
  - RiSE and PUMA Workshop, Mondsee, Austria, July 2014. (20 min)
  - FRIDA Workshop, Vienna, Austria, July 2014. (25 min)
- *Fast Concurrent Data-Structures Through Explicit Timestamping*
  - YCW Workshop, York, UK, April 2014. (25 min)
- *Fairness vs. Linearizability in a Concurrent FIFO Queue*
  - University of York, UK, March 2014. (45 min)
  - DMTM Workshop, Vienna, Austria, January 2014. (25 min)
- *How FIFO is Your Concurrent FIFO Queue?*
  - University of York, UK, September 2013. (45 min)
  - RACES Workshop, Tucson, Arizona, October 2012. (20 min)
  - RiSE and PUMA Workshop, Goldegg, Austria, September 2012. (30 min)
- *Short-term Memory for Self-collecting Mutators*
  - University of Kent, UK, September 2011. (45 min)

- Google Tech Talk, London, UK, September 2011. (45 min)
- ISMM, San Jose, California, June 2011. (25 min)
- PUMA Workshop, Szentendre, Hungary, October 2010. (45 min)
- *Automating Heap Management through Short-term Memory*
  - WRISE Workshop, Salzburg, Austria, April 2011. (30 min)
- *Short-term Memory for Self-collecting Mutators: Towards Time- and Space-predictable Virtualization*
  - RiSE Workshop, Graz, Austria, February 2010. (30 min, together with Ana Sokolova)

#### CONFERENCE REVIEWER

- European Conference on Computer Systems (EuroSys) - **2010, 2015**;
- International Conference on Embedded Systems (EMSOFT) - **2010, 2011, 2013, 2014**;
- International Conference on Formal Techniques for Distributed Objects, Components and Systems (FORTE) - **2014**;
- IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS) - **2011, 2014**;
- ICT Innovations Conference - **2013**;
- Design, Automation and Test in Europe (DATE) - **2011, 2013**;
- International Conference on Formal Modeling and Analysis of Timed Systems (FORMATS) - **2012**;
- International Conference on Computer-Aided Design (ICCAD) - **2009, 2011, 2012**;
- International Workshop on Component-Based Design of Resource-Constrained Systems (CORCS) - **2011, 2012**;
- International Conference on Formal Methods and Models for Codesign (MEMOCODE) - **2010, 2012**;
- IEEE Real-Time Systems Symposium (RTSS) - **2011**;
- Workshop on Adaptive and Reconfigurable Embedded Systems (APRES) - **2009, 2011**;
- Design Automation Conference (DAC) - **2011**;
- International Conference on Embedded and Ubiquitous Computing (EUC) - **2010**;
- International Conference on Object-oriented Programming, Systems, Languages, and Applications (OOPSLA) - **2010**;
- International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS) - **2010**;

#### JOURNAL REVIEWER

- Parallel Processing Letters (PPL);
- Discrete Applied Mathematics (DA);
- Pervasive and Mobile Computing (PMC);

## TEACHING EXPERIENCE

- **Winter 2014/2015:** Lecturer: Proseminar (Practical) Formale Systeme (Logic and Sets), University of Salzburg, Austria (undergraduate level)
- **Winter 2013/2014:** Teaching Assistant: Introduction to Operating Systems, University of Salzburg, Austria (undergraduate level)
- **Winter 2012/2013:** Lecturer: Proseminar (Practical) Formale Systeme (Logic and Sets), University of Salzburg, Austria (undergraduate level)
- **Winter 2011/2012:** Lecturer: Proseminar (Practical) Formale Systeme (Logic and Sets), University of Salzburg, Austria (undergraduate level)
- **Summer 2010:** Teaching Assistant: Compiler Construction, University of Salzburg, Austria (undergraduate level)

## COMMUNITY

- Local arrangement co-chair for EuroSys 2011

## OTHER EDUCATION

- **March 2010:** *Quantitative Model Checking Ph.D. School*, organized by the European Network of Excellence ARTIST Design and the Danish VKR Center of Excellence MT-LAB, IT University Copenhagen, Denmark.
- **November 2013:** *Google Europe Ph.D. Student Summit on Compiler & Programming Technology*, Munich, Germany.

## REFERENCES

- Christoph M. Kirsch, Professor, *University of Salzburg*, Austria, Department of Computer Sciences, [ck@cs.uni-salzburg.at](mailto:ck@cs.uni-salzburg.at)
- Mike Dodds, Anniversary Lecturer, *University of York*, UK, Department of Computer Science, [mike.dodds@york.ac.uk](mailto:mike.dodds@york.ac.uk)
- Eran Messeri, Software Engineer, *Google Inc.*, London, UK, [eranm@google.com](mailto:eranm@google.com)
- Dietmar Winkler, Project Leader, *Tecan Austria GmbH*, Austria, [dietmar.winkler@tecan.com](mailto:dietmar.winkler@tecan.com)

Curriculum Vitae  
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