

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

Ph.D. Candidate in Computer Science **November 2009 - present**
University of Salzburg, Austria

Ph.D. student with Prof. Christoph M. Kirsch in the field of concurrent data structures and systems engineering

Projects:

Scal: analysis and implementation of concurrent data structure algorithms;

[<http://scal.cs.uni-salzburg.at>]

Short-term Memory: a new model for heap management;

[<http://tiptoe.cs.uni-salzburg.at/short-term-memory>]

Dipl.-Ing. (M.Sc.) **October 2007 - October 2009**
University of Salzburg, Austria
Computer Science

Bakk.techn. (B.S.) **October 2004 - October 2007**
University of Salzburg, Austria
Computer Science

WORK EXPERIENCE

Visiting Researcher **August 2013 - September 2013**
Visiting Mike Dodds, University of York, UK
[<http://www-users.cs.york.ac.uk/~miked>]
Design, implementation, and analysis of concurrent data structure algorithms;

Intern **June 2011 - September 2011**
Google Inc., London, UK [<http://www.google.com>]
Implementation of advanced user interactions in the browser automation framework WebDriver;

Software Engineer (part time) **November 2004 - October 2009**
Tecan Austria GmbH, Grödig, Austria [<http://www.tecan.com>]
Main activities: software development: design and implementation of control and service software for laboratory devices;

Intern **August 2003**
Tecan Austria GmbH, Grödig, Austria [<http://www.tecan.com>]
Testing control software for laboratory devices;

Intern

August 2002 - September 2002

Tecan Austria GmbH, Grödig, Austria [<http://www.tecan.com>]

Implementation of a record-and-replay testing system for control software of laboratory devices;

PUBLICATIONS

- [1] **Andreas Haas**, Thomas Hütter, Christoph M. Kirsch, Michael Lippautz, Mario Preishuber, Ana Sokolova - *Scal: A Benchmarking Suite for Concurrent Data Structures*, in Proc. International Conference on Networked Systems (NETYS), 2015.
- [2] Mike Dodds, **Andreas Haas**, Christoph M. Kirsch - *A Scalable, Correct Time-Stamped Stack*, in Proc. Symposium on Principles of Programming Languages (POPL), 2015.
- [3] 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.
- [4] **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.
- [5] **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.
- [6] 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.
- [7] 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.
- [8] 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.
- [9] 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.
- [10] **Andreas Haas** - *Expiration Classes for Implicit Memory Management*, Master Thesis, 2009, University of Salzburg, Austria.

TALKS

- *A Scalable, Correct, Time-Stamped Stack*
 - Google Tech Talk, Munich, Germany, September 2011. (45 min)
 - 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
- Mike Dodds, Anniversary Lecturer, *University of York*, UK, Department of Computer Science, mike.dodds@york.ac.uk
- Eran Messeri, Software Engineer, *Google Inc.*, London, UK, eranm@google.com
- Dietmar Winkler, Project Leader, *Tecan Austria GmbH*, Austria, dietmar.winkler@tecan.com

Curriculum Vitae
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