Martin Aumüller

Curriculum Vitae: July 13, 2015

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Birth:	January 12th, 1986 in Gera, Germany
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Education

April 2010 – June 2015	Dr. rer. nat. in Theoretical Computer Science (equivalent to a Ph.D.), Ilmenau, University of Technology, Dissertation: On the Analysis of Two Randomized Algorithms: Multi-Pivot Quicksort and Efficient Hash Functions, Reviewer: Martin Dietzfelbinger, Rasmus Pagh, Philipp Woelfel.
Oct. 2004 – Mar. 2010	Dipl.-Inf. in Computer Science (equivalent to a Master's degree), Ilmenau, University of Technology, Major: Computer Science, Minor: Mathematics, Thesis: An Alternative Analysis of Cuckoo Hashing with a Stash and Realistic Hash Functions.
June 2004	Abitur.

Working Experience

April 2010 –	Research and Teaching Assistant at the Chair of Complexity Theory and Efficient Algorithms, Ilmenau University of Technology.
Jan. 2010	Student Research Assistant at the Institute of Sociology at the Friedrich-Schiller-Universität Jena.
Mar. 2009 – Jul. 2009	Software Developer at Opera Software ASA in Linköping, Sweden.
Oct. 2008 – Feb. 2009	Internship Software Developer at Opera Software ASA.
Oct. 2005 – Sep. 2008	Various positions as a Student Research Assistant at TU Ilmenau.

Publications

Journal publications:

1. M. Aumüller, M. Dietzfelbinger, *Optimal Partitioning for Dual-Pivot Quicksort*, to appear in ACM Transactions on Algorithms.
2. M. Aumüller, M. Dietzfelbinger, P. Woelfel, *Explicit and Efficient Hash Families Suffice for Cuckoo Hashing with a Stash*, *Algorithmica (70)*, 2014, doi: *10.1007/s00453-013-9840-x*. Special Issue on Selected Papers from ESA 2012.

Refereed conference papers:

1. M. Aumüller, M. Dietzfelbinger, *Optimal Partitioning for Dual Pivot Quicksort*, ICALP 2013, 40th International Colloquium on Automata, Languages, and Programming, 2013.
2. M. Aumüller, M. Dietzfelbinger, P. Woelfel, *Explicit and Efficient Hash Families Suffice for Cuckoo Hashing with a Stash*, ESA 2012, 20th Annual European Symposium on Algorithms, 2012.
3. M. Aumüller, M. Dietzfelbinger, M. Rink, *Experimental Variations of a Theoretically Good Retrieval Data Structure*, ESA 2009, 17th Annual European Symposium on Algorithms, 2009.

Theses:

1. *On the Analysis of Two Randomized Algorithms: Multi-Pivot Quicksort and Efficient Hash Functions*, Dissertation, TU Ilmenau, 2015.
2. *An Alternative Analysis of Cuckoo Hashing with a Stash and Realistic Hash Functions*, Master's thesis, TU Ilmenau, 2010.

Presentations

1. *Strong Randomness Properties of (Hyper-)Graphs Generated by Simple Hash Functions*, Analysis of Algorithms 2015, Strobl, Austria, June 2015.
2. *Optimal Partitioning for Multi-Pivot Quicksort*, Dagstuhl Seminar 14091, "'Data Structures and Advanced Models of Computation on Big Data"', Schloss Dagstuhl, February 2014.
3. *Optimal Partitioning for Dual Pivot Quicksort*, ICALP 2013, Riga, July 2013.
4. *Optimal Partitioning for Dual Pivot Quicksort*, 66. Theorietag der Fachgruppe Algorithmen und Komplexität, Hannover, Germany, June 2013.
5. *Explicit and Efficient Hash Families Suffice for Cuckoo Hashing with a Stash*, ESA 2012, Ljubljana, September 2012.

6. *Strong Randomness Properties of Graphs and Hypergraphs Generated by Simple Hash Functions*, Research seminar, Ilmenau, December 2011.
7. *Cuckoo Hashing with a Stash and Realistic Hash Functions*, 60. Theorietag der Fachgruppe Algorithmen und Komplexität, Kiel, Germany, June 2010.

Community Service

- Reviewer: WADS 2011, ICALP 2013, ESA 2013, Information Processing Letters.
- Co-organizer: 69. Workshop über Algorithmen und Komplexität at TU Ilmenau, 2015
- Local organizer: On a regular basis, I presented work of the Institute at workshops for pupils and at open house days. Moreover, I organized the "summer festival" of the faculty in Ilmenau in 2015.

Teaching Experience (in German)

Lectures	"Efficient Algorithms" (under-graduate level) in 2012
Teaching Assistantships	under-graduate: "Efficient Algorithms" (2010 – 2014) and "Algorithms and Data Structures" (2015) graduate: "Efficient Algorithms 2" (2010 – 2015), "Approximation Algorithms" (2011, 2012), and "Complexity Theory" (2011, 2013)

Advised Students

2014	D. Knacker, "Theoretical Considerations in Route Planning Algorithms" (Bachelor's thesis)
2014	A. Chemissov, "Performance Evaluation of Efficient Hashing Methods" (Bachelor's thesis)
2014	P. Klaue, "Optimal Partitioning for Multi-Pivot Quicksort" (Master's thesis)
2012	A. Seifert, "Modern Algorithms for Route Planning" (Bachelor's thesis)

Awards and Prizes

October 2013	Awarded "Lehrpreis 2013" from Technische Universität Ilmenau (one out of ten awards (university-wide) for excellent teaching).

I've won the following teaching awards from the Faculty of Computer Science and Automation at TU Ilmenau based on student's evaluations:

December 2011	1 Award: “best tutorial” (“Efficient Algorithms”)
December 2012	3 Awards: “best lecture” (“Efficient Algorithms”) and “best tutorial” (“Efficient Algorithms” & “Efficient Algorithms 2”)
December 2014	2 Awards: “best tutorial” (“Efficient Algorithms” & “Efficient Algorithms 2”).

Languages:

- German (native), English (fluent)
- Russian (basic), Swedish (beginner), Japanese (beginner)

Additional Skills

Programming languages:	Proficient in C++, Java and Ruby, experienced in Javascript, PHP, Python, SQL (Postgres)
Operation systems:	GNU/Linux, Windows, Mac OS X
Documentation and Typography:	Doxygene, Javadoc, LaTeX