

MALTE SCHWARZKOPF

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Date of Birth: 01/01/1988

Nationality: German

EDUCATION AND QUALIFICATIONS

PhD in Computer Science

2009–2015

Specialized in operating systems and distributed systems, advised by Dr Steven Hand.

Dissertation title: “Operating system support for Warehouse-Scale Computing”.

Funded by a St John’s College Benefactors’ Scholarship and the DARPA MRC² program.

Systems Research Group, Computer Laboratory, University of Cambridge, UK

BA (Hons.) in Computer Science (superseded by MA conferred May 10, 2013)

2006–2009

Results: Part IA: 2.i, Part IB: 1, Part II: 1 (ranked 2nd in year)

St John’s College, University of Cambridge, UK

Abitur (German higher education entrance qualification)

1998–2006

Final grade: 1.0 (814/840) – Examined subjects: Mathematics, History, Biology, German.

Skipped a year in 1998/1999, entering second semester of year 6 after first semester of year 5.

Walddörfer-Gymnasium Hamburg, Germany

EMPLOYMENT HISTORY

Massachusetts Institute of Technology, CSAIL, Postdoctoral Associate

since February 2016

Cambridge, MA, USA

- Research and teaching responsibilities in the Parallel and Distributed Operating Systems (PDOS) group.
- Working with Prof. M. Frans Kaashoek, Prof. Robert Morris, and Prof. Eddie Kohler (Harvard).

St John’s College, Acting Director of Studies in Computer Science

October 2013–August 2014

Peterhouse, Director of Studies in Computer Science

April 2014–August 2014

Cambridge, UK

- Coordinated undergraduate teaching for 18 (St John’s) and 3 (Peterhouse) Computer Science students.
- Responsible for overall academic conduct, organisation of small-group teaching and mentoring.

Google, Inc., Engineering Intern (PhD)

June–November 2011 & February–May 2012

Mountain View, CA, USA

- Investigated optimistically concurrent scheduler design in the new Omega cluster management system.
- Implemented a MapReduce scheduler with support for opportunistic allocation of spare resources.
- Achieved 4.5× job completion speedup in the 50th percentile in simulation on a real workload trace.
- Work published at EuroSys 2013 and awarded *Best Student Paper* award (see below).

Adjutem Software Solutions, Founder

since 2008

Cambridge, UK

- Bespoke software development consultancy, specialising in individually tailored room allocation and management software for use in Cambridge colleges.
- Clients include St John’s College, Cambridge and Peterhouse, Cambridge.

Broadcom Europe Ltd., Engineering Intern

June–September 2008

Cambridge, UK

- Wrote a pixel-accurate software simulation framework (supporting OpenGL 1.1 shaders and content) for Broadcom’s next-generation video processor.
- Design, implementation and documentation of a complex simulation framework situated right at the core of Broadcom’s mobile multimedia business; first working implementation of the new platform.

- Developed a profiler for the 3D subsystem of the VideoCore III processor: gathering, compression and storage of debug and performance information plus visualisation in a powerful graphical front-end.
- Developed a general-purpose code emitter library for the VideoCore assembly language for use in an OpenGL shader compiler and attribute loader.

MAJOR PUBLICATIONS

For a complete, up-to-date list of scientific publications, see <http://people.csail.mit.edu/malte/pub/>.

- I. Gog, M. Schwarzkopf, A. Gleave, R.N.M. Watson and S. Hand. **Firmament: fast, centralized cluster scheduling at scale**. In *Proceedings of the 12th Symposium on Operating Systems Design and Implementation (OSDI)*, 2016.
- M.P. Grosvenor, M. Schwarzkopf, I. Gog, R.N.M. Watson, A. Moore, S. Hand and J. Crowcroft. **Queues don't matter when you can JUMP them!**. In *Proceedings of the 12th Symposium on Networked Systems Design and Implementation (NSDI)*, 2015. (BEST PAPER AWARD).
- I. Gog, M. Schwarzkopf, N. Crooks, M.P. Grosvenor, A. Clement and S. Hand. **Musketeer: all for one, one for all in data processing systems**. In *Proceedings of the 10th European Conference on Computer Systems (EuroSys)*, 2015.
- M. Schwarzkopf, M.P. Grosvenor and S. Hand. **New wine in old skins: the case for distributed operating systems in the data center**. In *Proceedings of the 4th Asia-Pacific Workshop on Systems (APSYS)*, 2013.
- M. Schwarzkopf, A. Konwinski, M. Abd-El-Malek and J. Wilkes. **Omega: flexible, scalable schedulers for large compute clusters**. In *Proceedings of the 8th European Conference on Computer Systems (EuroSys)*, 2013. (BEST STUDENT PAPER AWARD).
- M. Schwarzkopf, D.G. Murray and S. Hand. **The seven deadly sins of cloud computing research**. In *Proceedings of the 4th Workshop on Hot Topics in Cloud Computing (HotCloud)*, 2012.
- D.G. Murray, M. Schwarzkopf, C. Snowton, S. Smith, A. Madhavapeddy and S. Hand. **CIEL: a universal execution engine for distributed data-flow computing**. In *Proceedings of the 8th Symposium on Networked System Design and Implementation (NSDI)*, 2011.

ACADEMIC SERVICE

SFMA 2018 Program Committee	<i>from Feb. 2018</i>
ICDCS 2018 Program Committee (Distributed Operating Systems & Middleware Track)	<i>Dec. 2017–Feb. 2018</i>
WWW 2017 Program Committee (Systems & Infrastructure Track)	<i>Oct.–Nov. 2016</i>
EuroSys 2016 Program Committee (light)	<i>Oct. 2015–Mar. 2016</i>
PLDI 2015 Artifact Evaluation Committee	<i>Feb.–April 2015</i>
Other program committees: TinyToCS (Tiny Transactions on Computer Science), vol. 2 (2013), vol. 3 (2015), and vol. 4 (2016); EuroSys 2013 shadow PC.	

TEACHING

Director of Studies in Computer Science , Peterhouse, Cambridge	<i>April–September 2014</i>
Coordination of undergraduate teaching and academic oversight of Computer Science students.	
Acting Director of Studies in Computer Science , St John's College, Cambridge	<i>2013–2014</i>
Coordinating undergraduate admissions and teaching during Dr Robert Mullins's sabbatical leave.	
Supervisor for undergraduate final year dissertations , Computer Laboratory, Cambridge	<i>2010–2015</i>
Oversaw conception, execution and evaluation of independent student projects; 7/10 projects at first class grade; 5/10 in received awards or were specially commended (coming in the top five in class).	
Supervisor for Computer Science undergraduates , Computer Laboratory, Cambridge	<i>2009–2013</i>
Small-group teaching in courses including Computer Fundamentals, Operating Systems, Object-Oriented Programming, C/C++, Java and Advanced Systems Topics.	

AWARDS AND OTHER NOTABLE ACHIEVEMENTS

- Best paper award** at the Symposium on Networked Systems Design and Implementation (NSDI) for my paper entitled *Queues don't matter when you can JUMP them!*. May 2015
- Best student paper award** at the European Conference on Computer Systems (EuroSys) for my paper entitled *Omega: flexible, scalable schedulers for large compute clusters*. April 2013
- EuroSys student travel award** to attend the Symposium on Operating Systems Principles (SOSP) in Cascais, Portugal. July 2011
- Received **student travel grants** to attend several conferences:
- USENIX Symposium on Networked Systems Design and Implementation May 2015
 - ACM SIGOPS European Conference on Computer Systems (EuroSys) April 2015
 - ACM Symposium on Operating Systems Principles (SOSP) October 2013
 - ACM SIGOPS European Conference on Computer Systems (EuroSys) April 2013
 - USENIX Workshop on Hot Topics in Cloud Computing (HotCloud) June 2012
 - USENIX File and Storage Technologies Conference (FAST) February 2011
 - USENIX Annual Technical Conference (ATC) June 2010
 - ACM SIGOPS European Conference on Computer Systems (EuroSys) April 2010
- Awarded the **Hockin, Hughes and Wright prizes for academic distinction** for coming 2nd in final year examinations; re-elected as scholar. July 2009
- Awarded a **College prize for Computer Science** for performance in second year examinations; elected **scholar** of St John's College. July 2008
- Admitted to membership of the **German National Academic Foundation** ("Studenstiftung des deutschen Volkes"). early 2007
- Named "distinguished former student and honorary member of teaching staff" upon leaving the Walddörfer-Gymnasium Hamburg. June 2006

OTHER ACTIVITIES AND POSITIONS OF RESPONSIBILITY

- Organiser and convener** of the *Operating Systems Reading group* at the Computer Laboratory. 2012–2014
- Vice President** of the St John's College JCR Committee. 2009–2010
- Chairman** of the Student-Run Computing Facility (SRCF) in Cambridge. 2009–2010
- Computing Officer** on the St John's College JCR Committee (two terms). 2007–2009
- President** of the Wilkes Society (then "St John's College Computer Science Society"). 2008–2009
- Treasurer** and system administrator for the Student-Run Computing Facility (SRCF) in Cambridge. 2008–2009
- Editor-in-Chief** for the yearbook of the class of 2006 at the Walddörfer-Gymnasium Hamburg. 2005–2006

LANGUAGES

English: fluent — **German:** native speaker — **French:** conversational — **Latin:** rudimentary

OTHER INTERESTS

- I actively follow contemporary domestic and interational **politics**. I take a special interest in the European unification process, citizen rights and freedom of information.
- I am interested in **history**, particularly the history of ancient Rome and Greece, and history of science.

REFERENCES

References are available upon request.