

Simon Peter

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Research Interests

Operating systems, networks, software systems in general

Education

Ph.D. in Computer Science May 2012 (expected)

ETH Zurich, Switzerland, 2007 – 2012

Advisor: Timothy Roscoe

Thesis: *Resource Management in a Scalable Operating System*

Master of Science in Computer Science (thesis passed with distinction) September 2006

Carl-von-Ossietzky University Oldenburg, Germany, 2002 – 2006

Thesis: *Design and Implementation of a Flexible Framework for Replication and its Integration into NFSv4*

Minor in Music

Undergraduate studies in Mathematics, 2002 – 2003

Research Experience

Microsoft Research, Silicon Valley, CA. 2009 (Research Intern under Úlfar Erlingsson): Worked on the design and implementation of *Fay*, a system for the extensible, distributed tracing of clusters down to the OS kernel

Microsoft Research, Cambridge, UK. 2008 (Research Intern under Rebecca Isaacs): Designed and implemented *Tarpit*, a system for the topology and resource-aware placement of data-parallel computation on heterogeneous clusters

National Science Foundation, Arlington, VA, USA. 2006 (Research Appointment under Brett Fleisch): Conducted a study on file mutability and the state of filesystem trace studies

University of California, Riverside, CA, USA. 2005 – 2006 (Visiting Researcher under Brett Fleisch): Designed and implemented a flexible framework for replication and integrated it into NFSv4

Teaching Experience

Teaching Assistant:

Graduate class *Advanced Operating Systems*, ETH Zurich, 2008 – 2011.

Graduate class *Advanced Topics in Operating System Kernel Design*, ETH Zurich, 2007.

Graduate class *Graphs and Graph Algorithms*, University Oldenburg, 2004 – 2005.

Work Experience

Research Seminar Organizer: Organized the ETH Systems Group weekly research paper seminar, ETH Zurich, 2007 – 2008.

Web Administrator: Administered the internet presence of several university institutions, Carl-von-Ossietzky University Oldenburg, 2004 – 2005.

College Admission Test Consultant: Consulted students wishing to take the College Admission Test, Carl-von-Ossietzky University Oldenburg, 2004 – 2005.

Community Service

Nursing service at Kurklinik Bad Zwischenahn, Germany, 2001 – 2002.

Skills

Designed and implemented large projects in: C, C++, Java, Python, x86/ARM Assembly, Prolog, Haskell

Leader of the following open-source software projects:

- *AdPlug* (<http://adplug.sf.net>) portable FM synthesizer emulator and music sequencer library.
- *libbinio* (<http://libbinio.sf.net>) platform-independent, efficient binary I/O stream class library for C++. Has been used for data-intensive scientific projects at the Owens Valley Radio Observatory of the California Institute of Technology and at Clarkson University, New York.
- *SQL Media Library* (<http://sqlmedialib.sf.net>) C++ portable, SQL-based media management software with a very flexible user interface.
- *Rasterbike* network multiplayer game with a very clean networking interface in C, used by many to learn network game programming.

Contributed to the following open-source software projects:

- Debian GNU/Linux operating system (<http://www.debian.org>): Various bug fixes
- Firefox web-browser: Protocol add-on developer
- Asterisk PBX ISDN CAPI channel driver (<http://www.chan-capi.org>): 3-party conference (3PTY) support
- GRUB 2 bootloader (<http://www.gnu.org/software/grub/>): Strong cryptography support

Fluent in English and German

Peer Review

External reviewer:

18th ACM Conference on Computer and Communications Security (CCS), Chicago, IL, USA, 2011.

26th IEEE International Conference on Distributed Computing Systems (ICDCS), Lisbon, Portugal, 2006.

Selected Peer-reviewed Publications

Úlfar Erlingsson, Marcus Peinado, **Simon Peter**, and Mihai Budiu. *Fay: Extensible Distributed Tracing from Kernels to Clusters*. In *23rd ACM Symposium on Operating Systems Principles*, Cascais, Portugal, October 2011.

Simon Peter, Adrian Schüpbach, Dominik Menzi, and Timothy Roscoe. *Early experience with the Barrelfish OS and the Single-Chip Cloud Computer*. In *3rd Many-core Applications Research Community Symposium*, Ettlingen, Germany, July 2011.

Adrian Schüpbach, Andrew Baumann, Timothy Roscoe, and **Simon Peter**. *A declarative language approach to device configuration*. In *16th International Conference on Architectural Support for Programming Languages and Operating Systems*, Newport Beach, CA, USA, March 2011.

Simon Peter, Adrian Schüpbach, Paul Barham, Andrew Baumann, Rebecca Isaacs, Tim Harris, and Timothy Roscoe. *Design Principles for End-to-End Multicore Schedulers*. In *2nd USENIX Workshop on Hot Topics in Parallelism*, Berkeley, CA, USA, June 2010.

Andrew Baumann, Paul Barham, Pierre-Evariste Dagand, Tim Harris, Rebecca Isaacs, **Simon Peter**, Timothy Roscoe, Adrian Schüpbach, and Akhilesh Singhanian. *The Multikernel: A new OS architecture for scalable multicore systems*. In *22nd ACM Symposium on Operating Systems Principles*, Big Sky, MT, USA, October 2009.

Andrew Baumann, **Simon Peter**, Adrian Schüpbach, Akhilesh Singhanian, Timothy Roscoe, Paul Barham, and Rebecca Isaacs. Your computer is already a distributed system. Why isn't your OS? In *12th USENIX Workshop on Hot Topics in Operating Systems*, Monte Verità, Switzerland, May 2009.

Simon Peter, Pierre Dagand, Jan Rellermeyer, Adrian Schüpbach, Akhilesh Singhanian, Andrew Baumann, Timothy Roscoe, Paul Barham, Tim Harris, and Rebecca Isaacs. Scheduling in a Multikernel Operating System. In *ACM SIGOPS/EuroSys European Conference on Computer Systems*, Nuremberg, Germany, April 2009. Work-in-Progress Talk and Poster.

Simon Peter, Jan Rellermeyer, Adrian Schüpbach, Akhilesh Singhanian, Andrew Baumann, Timothy Roscoe, Paul Barham, and Rebecca Isaacs. Multikernel: An Architecture for Scalable Multi-core Operating Systems. In *8th USENIX Symposium on Operating Systems Design and Implementation*, San Diego, CA, USA, December 2008. Work-in-Progress Talk and Poster.

Adrian Schüpbach, **Simon Peter**, Andrew Baumann, Timothy Roscoe, Paul Barham, Tim Harris, and Rebecca Isaacs. Embracing Diversity in the Barrelfish Manycore Operating System. In *1st Workshop on Managed Multicore Systems*, Boston, MA, USA, June 2008.

Simon Peter, Andrew Baumann, Timothy Roscoe, Paul Barham, and Rebecca Isaacs. 30 seconds is not enough! A study of operating system timer usage. In *Proceedings of the ACM SIGOPS/EuroSys European Conference on Computer Systems*, April 2008.

Simon Peter. Operating System Design for Concurrent Languages and Heterogeneous Hardware. In *2nd EuroSys Doctoral Workshop*, Glasgow, Scotland, April 2008.

Simon Peter. Design and Implementation of a Flexible Framework for Replication and its Integration into NFSv4. Master's thesis, Systems Software and Distributed Systems Group, Department of Computer Science, Carl von Ossietzky University of Oldenburg, Germany, September 2006.

Simon Peter. Erzeugung und Sammlung von Testgraphen. Thesis, Graphs and Networks Group, Department of Computer Science, Carl von Ossietzky University of Oldenburg, Germany, June 2004.

Book Contributions

Günther Stiege. *Graphen und Graphalgorithmen*. Shaker, May 2006.

Awards

German National Academic Foundation Fellowship, 2004 – 2006