Gerd Zellweger

Contact Information

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Education

ETH Zürich, Switzerland

Ph.D. Student in Computer Science — **2013 – present**

- Advisor: Professor Timothy Roscoe

Master of Science in Computer Science — **2009 – 2012**

- Focus: Distributed Systems
- Advisor: Professor Timothy Roscoe

Bachelor of Science in Computer Science — **2006 – 2010**

Professional Experience

HP Labs, Palo Alto, USA

Research Associate — **June 2015 – September 2015**

I worked in the systems research group where I designed, implemented and evaluated extensions to the virtual memory subsystem for a BSD derivative OS, to address problems occurring with huge memory capacities in high-end server systems.
Technologies: C, virtual memory systems

Microsoft Research, Redmond, USA

Research Intern — **July 2014 – September 2014**

I collaborated with the Orleans team to work on the Orleans actor system, a distributed runtime for the cloud. I looked specifically at actor placement algorithms and developed new algorithms to improve the actor placement decisions and evaluated them in the cloud.
Technologies: C#, .NET, Azure Cloud, Orleans

sc-n.ch, Zürich, Switzerland

Software Engineer — **February 2012 – February 2013**

Capgemini sd&m, Zürich, Switzerland

Working Student — **September 2008 – December 2008**
Developer Intern — **June 2008 – September 2008**

Peer-reviewed Publications

Gerd Zellweger, Denny Lin, Timothy Roscoe. "**So many performance events, so little time**", *Proceedings of the 7th Asia-Pacific Workshop on Systems (APSys)*, Hong Kong, China, August 2016.

Jana Giceva, Gerd Zellweger, Gustavo Alonso, Timothy Roscoe. "**Customized OS support for data processing**", *Proceedings of the 12th International Workshop on Data Management on New Hardware (DaMoN)*, San Francisco, USA, June 2016.

Jana Giceva, Gerd Zellweger, Gustavo Alonso, Timothy Roscoe. "**Basslet: an OS runtime for parallel data processing**", *Workshop on Multicore and Rack-scale Systems (MaRS)*, London, UK, April 2016 [extended abstract & talk].

Izzat El Hajj, Alexander Merritt, Gerd Zellweger, Dejan Milojicic, Reto Achermann, Paolo Faraboschi, Wen-mei Hwu, Timothy Roscoe, Karsten Schwan. "**SpaceJMP: Programming with Multiple Virtual Address Spaces**", *Proceedings of the 21th international conference on Architectural support for Programming languages and Operating systems (ASPLOS)*, Atlanta (GA), USA, April 2016 [HiPEAC paper award].

Simon Gerber, Gerd Zellweger, Reto Achermann, Kornilios Kourtis, Timothy Roscoe, Dejan Milojicic. "**Not Your Parents' Physical Address Space**", *Proceedings of the 15th Workshop on Hot Topics in Operating Systems (HotOS)*, Kartause Ittingen, May 2015.

Gerd Zellweger, Simon Gerber, Kornilios Kourtis, Timothy Roscoe. "**Decoupling Cores, Kernels, and Operating Systems**", *Proceedings of the 11th USENIX Symposium on Operating Systems Design and Implementation (OSDI)*, Broomfield, USA, October 2014.

Gerd Zellweger, Adrian Schüpbach, Timothy Roscoe. "**Unifying synchronization and events in a multicore OS**", *Proceedings of the 3rd Asia-Pacific Workshop on Systems (APSys)*, Seoul, South Korea, July 2012.

Patents

Izzat El Hajj, Alexander Merritt, Gerd Zellweger, Dejan Milojicic. **Multiple Persistent Virtual Address Spaces (MPVAS)**, PCT/US2016/015661, submission pending, filed Jan. 29, 2016.

Izzat El Hajj, Alexander Merritt, Gerd Zellweger, Dejan Milojicic. **Versioning using multiple virtual address spaces per process**, PCT/US2016/015814, submission pending, filed Jan. 29, 2016.

Izzat El Hajj, Alexander Merritt, Gerd Zellweger, Dejan Milojicic. **Hardware support for tracking writes to memory objects with sub-page granularity**, PCT/US2016/015815, submission pending, filed Jan. 29, 2016.

Izzat El Hajj, Alexander Merritt, Gerd Zellweger, Dejan Milojicic, Reto Achermann. **Use of memory write logging for fast versioning of in-memory objects**, PCT/US2016/015839, submission pending, filed Jan. 29, 2016.

Izzat El Hajj, Alexander Merritt, Gerd Zellweger, Dejan Milojicic. **Supporting and managing multiple virtual address spaces per process**, PCT/US2015/049726, submission pending, filed Sept. 11, 2015.

Projects

TEXercises

I was a co-founder of Texercises, a company that provides a collaborative online exercise database for all kinds of classes in science of nature and allows simple and quick generation of exercise sheets for teachers and students. I was responsible for the technical development of the product. Texercises was acquired by edTechLab AG in 2015.
Technologies: Python, Django, SQL, JavaScript, LaTeX, HTML

Barrelfish OS

www.barrelfish.org

The Barrelfish operating system is exploring how to structure an OS for future multi- and many- core systems motivated by the increasing amount of cores and diversity in computer hardware. I have contributed code to most areas of the system during my studies at ETH and I have written some of the core services and a few device drivers in the OS from scratch.
Technologies: C, Python, Haskell, x86, ARM

Open Source Software

www.github.com/gz

I am the creator and maintainer of several open source libraries, written in Rust, for low-level systems programming.

Teaching

I have been a teaching assistant at ETH for Systems Programming and Computer Architecture (2014, 2015, 2016), Parallel Programming (2014, 2015), Advanced Operating Systems (2014) and Computer Science for Biology and Pharmaceutical Sciences (2013). My duties involved weekly tutoring sessions with up to 30 students, devising and grading weekly exercises, midterm and end-term exams.

Programming I taught myself programming using PHP as a teenager. Currently I'm most comfortable using Python for scripting, C and Rust for low level programming and Java for everything in between. In addition, I have some experience programming in Haskell, Eiffel and C#.

Languages

- German: Native language
- English: Fluent in reading and writing
- French: Basic knowledge

References *Available on request.*