



Simon Gerber

Curriculum Vitae

Education

- 2012–2018 **PhD in Computer Science, ETH Zürich.**
Supervisor: Prof. Dr. Timothy Roscoe
- 2010–2012 **Masters of Science, ETH Zürich.**
Computer Science
- 2006–2010 **Bachelors of Science, ETH Zürich.**
Computer Science

Doctoral Thesis

- Title Authorization, Protection, and Allocation of Memory in a Large System
- Supervisor Prof. Dr. Timothy Roscoe
- Description In this dissertation, we rethink how an OS supports virtual memory. We present Barrelfish's memory system which inverts the classical virtual memory model. Applications explicitly manage physical RAM of different types, and directly (though safely) program the translation hardware. We show that Barrelfish's memory system enables use-cases for virtual memory not possible in Linux today, and demonstrate that other use-cases are simple to program and on par with Linux's performance. Finally, we show how Barrelfish's capability system allows the memory model to scale to multiple cores while retaining competitive performance.

Masters Thesis

- Title Virtual Memory in a Multikernel
- Supervisor Prof. Dr. Timothy Roscoe
- Description This thesis explores a method of managing virtual address spaces using capabilities in a multikernel. The thesis provides an experimental implementation of the method in the Barrelfish research OS.

Experience

Vocational

- '12–'18 **PhD student and research assistant,**
ETH Zürich, Computer Science department, Zürich.
- In my PhD, I worked on a new model for memory management at the OS level, which provides a novel method for authorization, protection and allocation of memory on modern, large systems. I gained insights in operating systems design and large scale memory management. Apart from my research, I taught exercise sessions for multiple classes on operating systems, computer networks, and systems programming.

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- Jun 14–Aug 14 **Intern**, *HP Labs*, 3000 Hanover St., Palo Alto, CA 95405, USA.
Worked on OS support for very large memories in the Systems Software group at HP Labs
- '09–'12 **Teaching assistant**, *ETH Zürich, Computer Science department*, Zürich.
As a student, I taught exercise sessions for various courses on systems programming, computer architecture, networking, and operating systems
- Jun '08–Aug '08 **Intern**, *Sensirion AG, Laubisrütistrasse 50, CH-8712 Stäfa, Switzerland*.
Designed and implemented firmware support for OEM gas-flow sensors for the industry-standard sensor buses PROFIBUS and DeviceNet

Miscellaneous

- '05–today **Free-lancer**, *Zürich*.
Redesign, implementation, and technical support for www.archinatura.ch
- '09–'12 **Volunteer**, *Computer Science student association at ETH Zürich (VIS)*.
Worked on layout for the association magazine "VISIONEN"

Publications

- May '15 **Not your parents' physical address space**, *Proceedings of the 15th Workshop on Hot Topics in Operating Systems (HotOS-XV)*, Karthause Ittingen, Switzerland, with G. Zellweger, R. Achermann, K. Kourtis, T. Roscoe, D. Milojicic.
http://www.barrelfish.org/publications/pas_hotos15.pdf
- Oct '14 **Decoupling Cores, Kernels, and Operating Systems**, *Proceedings of the 11th USENIX Symposium on Operating Systems Design and Implementation (OSDI 2014)*, Broomfield, CO, with G. Zellweger, K. Kourtis, T. Roscoe.
<http://www.barrelfish.org/publications/zellweger-decoupling-cores.pdf>

Projects

- '06–today Main contributor to *Musicus MPC*, a music player UI.
<http://simu.github.com/musicus-mpc/>
- '11–'18 Core contributor to the Barrelfish OS. <http://barrelfish.org>
<https://github.com/BarrelfishOS/barrelfish>
- '17–today Maintainer for Password Hasher Plus Firefox Plugin.
<http://simu.github.com/passwordhasherplus/>

Languages

- German native speaker
- English proficient *Conversationally fluent*

Interests

- Playing the guitar *classical and electrical*
- Photography
- Swimming, Snowboarding and Badminton

References

References available on request

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