

# Curriculum Vitae

## Jonas Fietz

Nationality                      German  
Date of Birth                    03.12.1985, Georgsmarienhütte  
Languages                      German (native), English (fluent), French (Beginner)

### Education

09/2013 – current            **PhD student**  
                                      École Polytechnique Fédérale de Lausanne  
                                      Networking Architecture Lab (Advisor: Prof. Katerina Argyraki)  
                                      Data Center Systems Lab (Co-Advisor: Prof. Edouard Bugnion)  
10/2005 – 01/2013         **Diploma in Computer Science (1.1)**  
                                      Karlsruhe Institute of Technology (KIT), Diploma Computer Science  
                                      Areas of Specialisation: *Operating Systems* and *Software Engineering and Compiler Construction*  
                                      Diploma Thesis: *Performance Optimization of Parallel Lattice Boltzmann Fluid Flow Simulations on Complex Geometries*;  
                                      Advisors: Prof. Dr. Peter Sanders, Prof. Dr. Vincent Heuveline  
10/2006 – 12/2012         **Diploma in Mathematics (1.7)**  
                                      Karlsruhe Institute of Technology (KIT), Diploma Mathematics

### Publications

*Centralizing Virtual Networking in Top-of-Rack Switches*

J. Fietz, S. Whitlock, K. Argyraki, E. Bugnion. *SOCC 2016*

*CloudBuild: Microsoft's Distributed and Caching Build System*

H. Esfahani, J. Fietz, Q. Ke, A. Kolomiets, E. Lan, E. Mavrinac, W. Schulte, N. Sanches, S. Kandula. *ICSE-SEIP 2016*

*Optimized Hybrid Parallel Lattice Boltzmann Fluid Flow Simulations on Complex Geometries*

J. Fietz, M.J. Krause, C. Schulz, P. Sanders, V. Heuveline. *Euro-Par 2012*

### Work Experience

09/2014 – current            **PhD Student** at École Polytechnique Fédérale de Lausanne  
06/2016 – 09/2016         **Google Intern** - GMail Backend Performance Team - Mountain View  
06/2015 – 09/2015         **Microsoft Research Intern** - Redmond  
09/2013 – 08/2014         **PhD Fellow** at École Polytechnique Fédérale de Lausanne  
09/2005 – 08/2013         **Developer Server Administrator**  
                                      Innovalan Entertainment GmbH  
05/2006 – 08/2013         **Freelance Developer**  
                                      e.g. for Müller New Media and Synlife (PHP/MySQL)  
                                      Developing web applications, both front- and back-end, including technical design  
08/2009 – 10/2010         **Research Assistant** at the Engineering Mathematics and Computing Lab (C/C++)  
07/2007 – 01/2008         Member of **Information Systems Team**  
                                      Student Space Exploration and Technology Initiative  
                                      ESA – European Space Agency  
01/2006 – 05/2006         **Developer** (PHP/MySQL) - i-Karlsruhe

## Projects

Centralizing Network Virtualization at the Top-of-Rack	Implementation and evaluation of a hybrid switch application on MIPS. Combining hardware switch and software data plane to get speed of hardware with extensibility of software. Multi-threaded application with low-level hardware access and network programming. Implementation of an OpenStack plugin to utilize this hardware for network virtualization acceleration.
Multi-Server Operating System	Class project for designing and implementing a multi server operating system including small naming server, filesystem, and memory management on top of L4 kernel - One of two developers, solely implemented memory managements, POSIX calls for e.g. fork, exec Keywords: L4, C, ASM, Systems Programming, POSIX, API design
Load Balancer for OpenLB	Diploma thesis project implementing a load balancer for a fluid flow simulation library running on HPC, using weighted graphs and partitioning - Main developer for this part Keywords: C++, fluid flow simulation, HPC, Graph Algorithms, Performance Evaluation
Value Range Propagation in libFIRM	Implement value range propagation analysis phase extended with bit patterns in libFIRM and optimizations utilizing this information - Main developer for this part Keywords: Compilers, C, Optimization, Static Single Assignment
OpenGPI	GUI for configuring applications utilizing XML based templates, supporting ranges and conditional display - Main developer Keywords: C++, Qt, XML, XML Schema Verification, GUI interfaces
Multiple Websites	Worked on many different web applications, including Facebook apps - both as single developer, developing all technical aspects, as well as being a group member and project leader Keywords: PHP, Python, MySQL, PostgreSQL, HTML, CSS, DB design
Energy Aware Filesystem in Linux	Implemented an energy aware RAID layer that utilized energy characteristics of SSD and HDD to decrease energy usage of the file system Class project - Main developer and designer Keywords: Kernel Programming, C, File Systems, Energy Awareness, Linux

## Programming Languages

C	Both low (Kernel level) and higher level programming (libFIRM, virtual data plane)
C++	Experience through multiple applications, mostly limited to versions prior to C++11
PHP	Typical web developer exposure, excluding newer OO features, mostly in combination with MySQL and PostgreSQL
Python	Scripting language for data analysis, small GUI pet projects (PyQt), web development (internal), “shell” scripting

## Rewards

12/2014	Distinguished Service Award
05/2013	Top 10% of the Diploma class of 2014 in Computer Science at KIT
07/2008	Top 10% of the prediploma class of 2007/2008 in Computer Science at KIT
05/2003	Winner Future Business Leaders of America C++ Contest – State Level