Stefan Eilemann

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Particulars

Date of Birth	9th August 1975
Birth Place	Wittenberg, Germany
Nationality	German, Swiss Permit C
Open Source Profile	github.com/eile

Profile

Senior software engineer and visualization team lead, with a specialization in interactive large data visualization, C++, parallel and distributed programming.

Expertise

- High performance graphics applications, parallel programming, distributed systems, Virtual Reality, collaborative visualization environments.
- Software and library design, development and maintenance using C++, Python, cmake and git in various programming environments.
- Software development methodology during the whole lifecycle, ranging from requirements analysis, specification, design, implementation to documentation, education, debugging, profiling and support.
- Broad knowledge of operating systems: Mac OS X, Linux, Windows, Irix.
- Native german speaker, fluent english, good french knowledge.

Experience

Visualization Team Lead — **Blue Brain Project, EPFL**
Lausanne, Switzerland — **May 2011 – current**

Technical manager of a visualization team of eight developers and one designer. Team management, software architecture and development for large-scale scientific visualizations of brain simulations.

Researcher, Parallel Rendering — **University of Zürich**
Zürich, Switzerland — **2005 – 2007, October 2015 – current**

Research new algorithms for large data visualization, in particular the parallelization, load-balancing and data distribution of parallel OpenGL applications on graphics clusters. Invented and developed Equalizer, a framework for scalable, distributed OpenGL applications.

CEO and Founder — **Eyescale Software GmbH**
Neuchâtel, Switzerland — **January 2007 – current**

Founded Eyescale in January 2007. Lead developer of the Equalizer parallel rendering framework, the Collage network library and other related libraries. Deploying Equalizer in existing ISV applications to scale the display size, performance and visual quality. Software architecture, design and development, hardware and software consulting for multi-GPU workstations, graphics clusters and Virtual Reality.

Senior Software Engineer, 3D Graphics **Tungsten Graphics**
Neuchâtel, Switzerland **January 2007 – June 2007**

Software consultant for visualization cluster software. Ported Equalizer to Windows XP, ported Chromium to Mac OS X and demonstrated various unmodified OpenGL applications on a large-scale display wall at WWDC07.

Senior Software Engineer **Esmertec AG**
Neuchâtel, Switzerland **January 2004 – September 2005**

Developed Java software in Esmertec's R&D group which enables user interface customization on mobile devices and desktops. Designed and implemented a fully functional 3D phone simulator for customer presentations.

Senior Software Engineer **Silicon Graphics, Inc.**
Neuchâtel, Switzerland **August 2000 – December 2003**

Worked in SGI's advanced graphics division as technical lead for OpenGL Multipipe SDK (MPK), a framework to develop high performance, scalable visualization software. Worked on DataSync, a distributed shared memory API for clusters.

Software Engineer **Freelancer**
Munich, Germany **April 2000 – July 2000**
Software Engineer **Intec GmbH**
Wessling, Germany **October 1998 – March 2000**

Work details available on demand.

Publications

Equalizer: A Scalable Parallel Rendering Framework, Stefan Eilemann, Maxim Makhinya, Renato Pajarola, IEEE Transactions on Visualization and Computer Graphics, vol. 15, no. 3, pp. 436-452, May/June 2009

Direct Send Compositing for Parallel Sort-Last Rendering, Stefan Eilemann, Renato Pajarola, In Proceedings Eurographics Symposium on Parallel Graphics and Visualization, May 2007

Cross-Segment Load Balancing in Parallel Rendering Fatih Erol, Stefan Eilemann, Renato Pajarola, In Proceedings Eurographics Symposium on Parallel Graphics and Visualization, April 2011

Fast Compositing for Cluster-Parallel Rendering, Maxim Makhinya, Stefan Eilemann, Renato Pajarola, In Proceedings Eurographics Symposium on Parallel Graphics and Visualization, pp. 111-120, May 2010

Education

École Polytechnique Fèdèrale de Lausanne
Master in Computer Science, October 2015, Grade 5.6/6.0

Berufsakademie Heidenheim
Dipl.-Ing. (eq BS) in Computer Science, September 1998

Lucas-Cranach-Gymnasium Wittenberg
Abitur (university entrance qualification), June 1994

Selected Projects

Blue Brain Visualization Software **github.com/BlueBrain**

Leading the development of various visualization applications and related libraries: Tide, a software for collaborative tiled display environments, Livre, a large-scale interactive volume rendering engine, Brayns, an interactive raytracer, and RTNeuron, an OpenGL-based renderer for brain simultation data (not open source).

RTT Scale **www.rtt.ag**

Lead the RTT Scale project from 2007-2011, from prototype to productization and customer roll-out, creating a distributed rendering module for RTT Deltagen. Extended the initial product over multiple release cycles to support a wide set of features, e.g., interactive CPU and GPU based raytracing, multi-view rendering, cutting-edge immersive scenarios and advanced networking support such as InfiniBand and reliable multicast.

Equalizer Parallel Rendering Framework **www.equalizergraphics.com**

Initiated the Equalizer project in 2005, creating the standard framework for parallel OpenGL applications. Leading the research and development of an industrial quality open source project. Managing a variety of software developers, driving the open source community and providing services to commercial users of Equalizer.

References

References are available on request.