

Simon Kallweit

Personal Data

Born 7 Nov 1982, Switzerland
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Education

02/17/2014 – 06/03/2016 **MSc in Computer Science**, *Swiss Federal Institute of Technology (ETH)*, Zürich.
Specialization Track: Visual Computing
Thesis: “Learning High-Order Scattering in Rendering from Data” Supervisor: Prof. Markus Gross

09/20/2010 – 08/30/2013 **BSc in Computer Science**, *Swiss Federal Institute of Technology (ETH)*, Zürich.
Major: Computational Science
Thesis: “Photon Beam Methods in Rendering” Supervisor: Prof. Markus Gross

Work Experience

02/32/2020 – present **Software Engineer**, *NVIDIA*, Zürich.
Working in the realtime graphics research team:

- Core developer of the *Falcor* rendering framework
- Design and implementation of a fast reference path tracer
- Research and development of new light transport algorithms

07/03/2017 – 12/20/2019 **Software Engineer**, *ESRI R&D Center*, Zürich.
Working as a core developer on the *ArcGIS API for JavaScript* platform:

- Improving the WebGL based rendering engine
- Design and implementation of various interactive tools for measuring features on maps
- General development work

03/01/2017 – 06/09/2017 **Intern**, *DRZ*, Zürich.
Worked on *Deep Scattering: Rendering Atmospheric Clouds with Radiance-Predicting Neural Networks* publication for SIGGRAPH Asia 2017.

11/14/2016 – 02/24/2017 **Software Engineer**, *Freelancer*.
Worked on various software projects, most notably developed a custom web presence for *swiss-PVD Coating AG*.

09/02/2014 – 01/16/2015 **Technology Intern**, *Walt Disney Animation Studios*, Burbank, CA.
Worked on several problems and tasks related to rendering of participating media within Disney’s Hyperion Renderer:

- Integration of Field3D and OpenVDB data formats
- Implementation of transformation, advection and interpolation based motion blur for volumes
- Design and development flexible yet performant framework for volume rendering
- Design and development of a high performance adaptive volume data structure

06/30/2014 – 08/22/2014 **Intern**, *DRZ*, Zürich.

- Development of CUDA based volume rendering framework using residual ratio tracking
- Extended residual ratio tracking with tri-linearly interpolated control variate

06/01/2008 – 12/16/2011 **Software Developer**, *FELA Management AG*, Diessenhofen.
Development lead for a commercial localization platform based on GSM/GPS technology. Contributions to the open-source real-time operating system eCos.

11/01/2001 – 03/31/2008 **Software Developer**, *intefo AG*, Herzogenbuchsee.
Responsible for analysis, design, implementation, testing and maintenance of software systems. Worked in multiple fields, including user interfaces, server applications and embedded systems in both Windows- and Linux-based environments.

Publications

2017 *Deep Scattering: Rendering Atmospheric Clouds with Radiance-Predicting Neural Networks*, Simon Kallweit, Thomas Müller, Brian McWilliams, Markus Gross, Jan Novák, Proceedings of SIGGRAPH Asia 2017 ([link](#))

Awards

December 2015 ETHZ Rendering Competition, 1st place ([link](#))
December 2015 ETHZ Physically Based Simulation, 1st place ([link](#))
June 2014 ETHZ Rendering Competition, 2nd place ([link](#))
Aug 2013 Demodays, 4k Procedural Graphics, 1st place ([link](#))
Mar 2013 Revision, PC 64k Intro, 2nd place ([link](#))
Aug 2012 Demodays, Realtime Size-Limited Compo, 1st place ([link](#))

Languages

German Native
English Fluent
French Basic

Computer Skills

Languages C/C++11, x86 SIMD, GLSL, CUDA, Python, JavaScript, Haskell
Tools Git, Qt, CMake, Matlab, Mathematica, \LaTeX
OS OSX, Linux, Windows

Interests and Projects

Physically based rendering
Demoscene, size-limited programming
Electronic music production and live performance