Sebastien SPEIERER

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Education

2012–2015 **EPFL - Switzerland**, *Bachelor in Communication Systems*, GPA: 5.62/6.
Object-oriented programming language (Java), Functional programming (Scala), Algorithms, Concurrency

2015–2018 **EPFL - Switzerland**, *Master's in Communication Systems*, GPA: 5.29/6.
Advanced computer graphics, Digital 3D geometry processing, High-performance computing, Computer vision, Distributed algorithms, Reinforcement learning in neural networks, Pattern classification and machine learning

2014-2015 **Carnegie Mellon University - USA**, *Exchange year in Computer Science*, GPA: 3.52/4.
Computer graphics, Artificial intelligence, Applied stochastic processes, Fundamental of signal processing

Work Experience

Today **RGL EPFL**, *Research Engineer*.
Mitsuba 2 development and differential rendering research.

Jun-Oct 2019 **Blue Brain Project**, *Visualization Software Engineer*.
Houdini pipeline development and differential rendering research.

2018 - Apr 2019 **Weta Digital**, *Rendering Researcher (6 months internship, 9 months full-time)*.
Research in the Manuka Renderer team on volume rendering and reflectance filtering techniques.

Jul-Sep 2017 **Pixar Animation Studios**, *Rendering Researcher internship*.
Conducted research on exploring and combining various approaches for many-lights sampling and path guiding.

Feb-Dec 2017 **RGL EPFL**, *Research Assistant*.
Mitsuba 2 development

Jul-Dec 2016 **Pixar Animation Studios**, *Rendering Software Engineer internship*.
Implementation of the Manifold Next Event Estimation in Renderman for efficient rendering of refractive caustics.

Publications and Projects

2020 **Radiative Backpropagation: An Adjoint Method for Lightning-Fast Differentiable Rendering**.
Merlin Nimier-David, Sebastien Speierer, Benoit Ruiz, Wenzel Jakob

2018 **Spatially-varying specular microstructures and reflectance filtering in a production renderer**.
Weta Digital, Master's Thesis

2018 **Caustic Connection Strategies for Bidirectional Path Tracing**.
Sebastien Speierer, Christophe Hery, Ryusuke Villemin, Wenzel Jakob

2016 **Metropolis Virtual Point Light Rendering**.
RGL EPFL, Semester Project

Computer skills

Languages C++, Python, CUDA, C, Java, Scala, Bash
Graphics Mitsuba, PBRT, OptiX, Houdini, Blender, RenderMan, OpenGL, GLSL, Unity, RSL, Katana, Nuke, Maya
Others Git, Pytorch, Visual Studio, Matlab, Mathematica, Photoshop, LaTeX, Microsoft Office, Windows, Linux

Film Credits and Awards

2019 *Avengers: Endgame* and *Gemini Man* - Visual Effects, Weta Digital
2015 3rd best Bachelor in Communication Systems at EPFL
Spring 2015 Carnegie Mellon University Dean's List

Languages and Interests

French Native Speaker
English Near Native
Music Classical Piano Degree, Cubase, Ableton Live, mixing, mastering