

Education

- 2015–2018 **EPFL - Switzerland**, *Master's in Communication Systems*, GPA: 5.29/6
Advanced computer graphics, High-performance computing, Computer vision, Machine learning
- 2012–2015 **EPFL - Switzerland**, *Bachelor in Communication Systems*, GPA: 5.62/6
- 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 3 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, Patents and Projects

- Siggraph 2022 **Dr.Jit: A Just-In-Time Compiler for Differentiable Rendering** [↗](#)
Wenzel Jakob, Sébastien Speierer, Nicolas Roussel, Delio Vicini
- Siggraph 2022 **Differentiable Signed Distance Function Rendering** [↗](#)
Delio Vicini, Sébastien Speierer, Wenzel Jakob
- Siggraph 2021 **Monte Carlo Estimators for Differential Light Transport** [↗](#)
Tizian Zeltner, Sébastien Speierer, Iliyan Georgiev, Wenzel Jakob
- Siggraph 2021 **Path Replay Backpropagation: Differentiating Light Paths using Constant Memory and Linear Time** [↗](#)
Delio Vicini, Sébastien Speierer, Wenzel Jakob
- CVPR 2021 **Wide-Depth-Range 6D Object Pose Estimation in Space** [↗](#)
Yinlin Hu, Sébastien Speierer, Wenzel Jakob, Pascal Fua, Mathieu Salzmann
- U.S. Patent 2021 **Method for improved handling of texture data for texturing and other image processing tasks** [↗](#)
Kimball D. Thurston, III, Luca Fascione, Sébastien Nicolas Speierer
- Siggraph 2020 **Radiative Backpropagation: An Adjoint Method for Lightning-Fast Differentiable Rendering** [↗](#)
Merlin Nimier-David, Sébastien Speierer, Benoit Ruiz, Wenzel Jakob
- 2018 **Spatially-varying specular microstructures and reflectance filtering in a production renderer** [↗](#)
Master's Thesis supervised by Wenzel Jakob and Andrea Weidlich (Weta Digital)
- 2018 **Caustic Connection Strategies for Bidirectional Path Tracing** [↗](#)
Sébastien Speierer, Christophe Hery (Pixar), Ryusuke Villemin (Pixar), Wenzel Jakob
- 2016 **Metropolis Virtual Point Light Rendering** [↗](#)
Semester Project supervised by Wenzel Jakob

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, L^AT_EX, Microsoft Office, Windows, Linux, MacOS

Languages, Interests, Film Credits and Award

- Languages French: Native Speaker, English: Near Native
- Music Classical Piano Degree, Cubase, Ableton Live, mixing, mastering, NOX Music [↗](#)
- Film Credits *Avengers: Endgame* and *Gemini Man* - Visual Effects, Weta Digital
- Award Carnegie Mellon University Dean's List (2015)