## Education 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 2012–2015 **EPFL** - **Switzerland**, Bachelor in Communication Systems, GPA: 5.62/6 Object-oriented programming language (Java), Functional programming (Scala), Algorithms, Concurrency 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. Pixar Animation Studios, Rendering Researcher internship Jul-Sep 2017 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 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 Radiative Backpropagation: An Adjoint Method for Lightning-Fast Differentiable Rendering Siggraph 2020 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, LaTeX, 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)