Delio Vicini

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Education

September 2017 — now	**PhD Student**, École Polytechnique Fédérale de Lausanne, Switzerland Advisor: Prof. Dr. Wenzel Jakob Topics: Differentiable rendering, volume rendering, machine learning
2015 — 2017	**M. Sc. in Computer Science**, ETH Zurich, Switzerland Focus Track: Visual Computing GPA: 5.92 / 6.00 (graduation with distinction) Thesis: Gradient-Domain Volumetric Path Tracing (Advisors: Dr. Jan Novák, Dr. Fabrice Rousselle, Prof. Dr. Markus Gross)
2012 — 2015	**B. Sc. in Computer Science**, University of Bern, Switzerland Subjects: Computer Science 90 ECTS, Mathematics 60 ECTS, History 30 ECTS GPA: 5.91 / 6.00 (Summa Cum Laude) Thesis: Image Filtering using Halide and a new Denoising Algorithm for Gradient-Domain Rendering (Advisor: Prof. Dr. Matthias Zwicker)

Publications

2021	D. Vicini, S. Speierer, W. Jakob, **Path Replay Backpropagation: Differentiating Light Paths using Constant Memory and Linear Time**, ACM Transactions on Graphics (Proc. of SIGGRAPH 2021)
2021	D. Vicini, W. Jakob, A. Kaplanyan, **A Non-Exponential Transmittance Model for Volumetric Scene Representations**, ACM Transactions on Graphics (Proc. of SIGGRAPH 2021)
2019	M. Nimier-David*, D.Vicini*, T. Zeltner, W. Jakob, **Mitsuba 2: A Retargetable Forward and Inverse Renderer,** ACM Transactions on Graphics (Proc. of SIGGRAPH Asia 2019), *joint first authors
2019	D. Vicini, V. Koltun, W. Jakob, **A Learned Shape-Adaptive Subsurface Scattering Model,** ACM Transactions on Graphics (Proc. of SIGGRAPH 2019)
2018	D.Vicini, D. Adler, J. Novák, F. Rousselle, B. Burley, **Denoising Deep Monte Carlo Renderings**, Computer Graphics Forum, 2018
2016	M.Manzi, D.Vicini, M.Zwicker: **Regularizing Image Reconstruction for Gradient-Domain Rendering with Feature Patches**, Computer Graphics Forum (Proc. of Eurographics 2016)

Professional Experience

June 2019 – October 2019	**Research Intern** (Facebook Reality Labs, Graphics Team) Facebook
November 2016 – February 2017	**Research Intern** (Rendering Group) Walt Disney Animation Studios (in collaboration with Disney Research Zurich)
July – September 2016	**Research Intern** (Rendering Group) Disney Research Zurich
Fall 2014, Spring 2014, Spring 2015	**Teaching Assistant** (Lectures: Analysis I/II, Computer Architecture) Mathematical Institute and Institute of Computer Science, University of Bern

Technical Skills

Programming Languages/Frameworks	C++, Python, PyTorch, Tensorflow, CUDA, MATLAB, Halide, C#, OpenGL, GLSL, Java
Tools	Git, Maya, Blender, Nuke, Photoshop, Illustrator

Language Skills

German	Native Language
English	Proficient
French	Intermediate