



Delio Vicini

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Core experience

Jan. 2023 - present	Senior research scientist, Google AR (Nov. 2024 - present) Research scientist, Google AR (Jan. 2023 - Nov. 2024) Research and development on inverse rendering, appearance reconstruction, digital humans, synthetic data generation and optical simulation for AR/VR.
2017 – 2022	PhD student, EPFL Realistic Graphics Lab (supervised by Prof. Wenzel Jakob) Research on physically-based differentiable rendering, volumetric scene representation, geometry reconstruction and machine learning for rendering. I also contributed significantly to the Mitsuba open-source research renderer.
2019	Research intern, Facebook Reality Labs (5 months) Internship in the FRL graphics team on volumetric scene representations.
2017	Master thesis, Disney Research / ETH Zurich (Prof. Markus Gross) (6 months) Master thesis on gradient-domain volumetric path tracing (grade 6.0/6.0).
2016/2017	Research intern, Walt Disney Animation Studios / Disney Research (3 months) Internship on denoising rendered deep images.
2016	Research intern, Disney Research (3 months) Internship on denoising for Monte Carlo rendering using local regression methods.
2015	Bachelor thesis, University of Bern (Prof. Matthias Zwicker) (6 months) Bachelor thesis on image filtering using Halide and denoising for gradient-domain rendering (grade 6.0/6.0).

Education

Sep. 2017 – Oct. 2022	Swiss Federal Institute of Technology in Lausanne (EPFL) PhD in computer science
2015 – 2017	Swiss Federal Institute of Technology in Zurich (ETH Zurich) M. Sc. in computer science (with focus on visual computing) GPA: 5.92 / 6.00 (graduation with distinction)
2012 – 2015	University of Bern B. Sc. in computer science and mathematics, minor in history GPA: 5.91 / 6.00 (Summa Cum Laude)

Additional experience

2019 – present	Program committee member & reviewer SIGGRAPH Asia 2024 IPC, EGSR 2023/2024/2025 IPC, and Eurographics 2024 IPC. Reviewing for SIGGRAPH/SIGGRAPH Asia/Transactions on Graphics, ICCV, Computer Graphics Forum, The Visual Computer, Computers & Graphics.
2017 – present	Teaching assistant, EPFL Teaching assistant for numerical methods and advanced computer graphics. Supervision of student projects on rendering and related topics.

2014/2015

Teaching assistant, University of Bern

Teaching assistant for Analysis 1, Analysis 2 and Computer Architecture

Expertise

Analytical	Computer graphics, physically-based and differentiable rendering, volume rendering, Monte Carlo methods, optimization, denoising, neural networks, real-time rendering
Programming	C++, Python, CUDA, Nanobind/PyBind11, Jax, PyTorch, Tensorflow, CMake, OpenGL, GLSL, HTML, CSS, Typescript
Tools	Git, Linux, Blender, Maya, Photoshop, Illustrator, DaVinci Resolve, LaTeX
Languages	English (proficient), German (native speaker), French (intermediate)

Honors and awards

SIGGRAPH 2025 best paper award, invited speaker at UCL high-beams seminar (2024) and VIS conference (2019, 2021), EPFL EDIC Fellowship (2017), Google Hash Code programming competition finalist (2016), 1st place physically-based simulation project competition (ETH Zurich, 2015), 2nd place rendering competition (ETH Zurich, 2015)

Publications

2025	S. Kheradmand*, D. Vicini* , G. Kopanas, D. Lagun, K. Moo Yi, M. Matthews, A. Tagliasacchi. StochasticSplats: Stochastic Rasterization for Sorting-Free 3D Gaussian Splatting , ICCV, *equal contribution
	P. Weier, J. Riviere, R. Guseinov, S. Garbin, P. Slusallek, B. Bickel, T. Beeler, D. Vicini . Practical Inverse Rendering of Textured and Translucent Appearance , ACM Trans. Graph. (SIGGRAPH)
	H. Lu, D. Vicini , W. Chang, T.-M. Li. Vector-Valued Monte Carlo Integration Using Ratio Control Variates . ACM Trans. Graph. (SIGGRAPH, best paper award)
	Y. Zheng, M. Chai, D. Vicini , Y. Zhou, L. Guibas, G. Wetzstein, T. Beeler. GroomLight: Hybrid Inverse Rendering for Relightable Human Hair Appearance Modeling , CVPR
2024	E. Yilmazer, D. Vicini , W. Jakob. Solving Inverse PDE Problems using Monte Carlo Estimators , ACM Trans. Graph. (SIGGRAPH Asia).
2023	K. Sarkar, M. Buehler, G. Li, D. Wang, D. Vicini , J. Riviere, Y. Zhang, S. Orts-Escolano, P. Gotardo, T. Beeler, A. Meka. LitNeRF: Intrinsic Radiance Decomposition for High-Quality View Synthesis and Relighting of Faces , SIGGRAPH Asia (conference track).
2022	D. Vicini , S. Speierer, W. Jakob, Differentiable Signed Distance Function Rendering , ACM Trans. Graph. (SIGGRAPH).
2022	W. Jakob, S. Speierer, N. Roussel, D. Vicini , Dr.Jit: A Just-In-Time Compiler for Differentiable Rendering , ACM Trans. Graph. (SIGGRAPH).
2021	D. Vicini , S. Speierer, W. Jakob, Path Replay Backpropagation: Differentiating Light Paths using Constant Memory and Linear Time , ACM Trans. Graph. (SIGGRAPH).
2021	D. Vicini , W. Jakob, A. Kaplanyan, A Non-Exponential Transmittance Model for Volumetric Scene Representations , ACM Trans. Graph. (SIGGRAPH).
2019	M. Nimier-David*, D. Vicini* , T. Zeltner, W. Jakob, Mitsuba 2: A Retargetable Forward and Inverse Renderer , ACM Trans. Graph. (SIGGRAPH Asia), *joint first authors.
2019	D. Vicini , V. Koltun, W. Jakob, A Learned Shape-Adaptive Subsurface Scattering Model , ACM Trans. Graph. (SIGGRAPH).
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 (Eurographics).