

SIMON LUCAS

Postdoctoral Researcher in Computer Graphics

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RESEARCH INTERESTS

I am a postdoctoral researcher at Inria Sophia Antipolis in the GraphDeco team. My research focuses on physically based and real-time rendering. I develop practical models and sampling methods for complex materials, while also exploring Gaussian-based representations for editable radiance fields and efficient global illumination.

EDUCATION

Ph.D. 📅 October 2021 – December 2024
University of Bordeaux, Inria Bordeaux 📍 France, Bordeaux

Thesis title: *A micrograin formalism for the rendering of porous materials.*

Supervisors: Pascal Barla, Romain Pacanowski

M.Sc. Computer Science, "Image and 3D" 📅 September 2019 – August 2021
University of Strasbourg 📍 France, Strasbourg

Thesis title: *Procedural Texture Synthesis using Tiling and Blending.*

Supervisors: Basile Sauvage, Xavier Chermain

+ [Master of Engineering – Computer Science, Image, Virtual Reality, Interaction and Games](#)

B.Sc. Computer Science 📅 September 2016 – June 2019
University of Strasbourg 📍 France, Strasbourg

+ [Master of Engineering – Computer Science, Image, Virtual Reality, Interaction and Games](#)

Scientific Baccalauréat 📅 2016
Lycée Marc Chagall 📍 France, Reims

WORK EXPERIENCE

Postdoctoral Researcher 📅 2025 - present

Inria Sophia-Antipolis, GraphDeco team

- Physically based rendering
- Light transport
- Real-time rendering
- Novel View Synthesis
- Relighting

PhD Student 📅 2021 - 2024

Inria Bordeaux, Manao team, University of Bordeaux

- Appearance modeling for porous materials
- Physically based rendering

Apprenticeship 📅 September 2020 - August 2021

ICube laboratory, University of Strasbourg

- Real-time rendering of glints
- Procedural texture generation

Third-year Internship 📅 July 2019 - August 2019

United Visual Researchers, Paris

- BRDF fitting
- Shader programming in Unity

First-year Internship 📅 June 2017 - July 2017

OPEX MEDIA / USE TOGETHER, Reims

- RPM package automation on CentOS 7
- Beta testing

PUBLICATIONS

Journal Articles

- [Lan+26] Alexandre Lanvin, Jeffrey Hu, **Simon Lucas**, Adrien Bousseau, and George Drettakis. "Intrinsic decomposition and editing of 3D Gaussian splats". In: *Proc. ACM Comput. Graph. Interact. Tech.* 9.1 (May 2026). DOI: [10.1145/3804495](https://doi.org/10.1145/3804495). URL: <https://doi.org/10.1145/3804495>.
- [SLD26] Ishaan Shah, **Simon Lucas**, and George Drettakis. "Frequency-Aware Spatio-Angular Gaussians for Efficient Global Illumination Precomputation and Real-Time Rendering". In: *Computer Graphics Forum* 44.7 (2026). DOI: [10.1111/cgf.70542](https://doi.org/10.1111/cgf.70542).
- [Xu+26] Kewei Xu, **Simon Lucas**, Mickaël Ribardière, Benjamin Bringier, and Pascal Barla. "A Discrete Polydisperse Anisotropic BSDF Model based on the Micrograin Framework". In: *Computer Graphics Forum* n/a.n/a (2026), e70387. DOI: <https://doi.org/10.1111/cgf.70387>. eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/cgf.70387>. URL: <https://onlinelibrary.wiley.com/doi/abs/10.1111/cgf.70387>.
- [LPB25] **Simon Lucas**, Romain Pacanowski, and Pascal Barla. "Importance Sampling of the Micrograin Visible NDF". In: *Computer Graphics Forum* 44.4 (2025), e70174. DOI: <https://doi.org/10.1111/cgf.70174>. eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/cgf.70174>. URL: <https://onlinelibrary.wiley.com/doi/abs/10.1111/cgf.70174>.
- [Luc+24] **Simon Lucas**, Mickaël Ribardière, Romain Pacanowski, and Pascal Barla. "A Fully-Correlated Anisotropic Micrograin BSDF Model". In: *ACM Trans. Graph.* 43.4 (July 2024), 111:1–111:14. ISSN: 0730-0301. DOI: [10.1145/3451257](https://doi.org/10.1145/3451257). (Visited on 07/25/2024).
- [Che+21] Xavier Chermain, **Simon Lucas**, Basile Sauvage, Jean-Michel Dischler, and Carsten Dachsbacher. "Real-Time Geometric Glint Anti-Aliasing with Normal Map Filtering". In: *Proc. ACM Comput. Graph. Interact. Tech.* 4.1 (Apr. 2021). DOI: [10.1145/3451257](https://doi.org/10.1145/3451257). URL: <https://doi.org/10.1145/3451257>.

Conference Proceedings

- [Luc26] **Simon Lucas**. "Correlated Smith Visibility from NDF-Derived Shapes". In: *Joint MAM MANER APPMAT Workshop on Material Appearance Modeling*. Bordeaux (France), France, 2026. URL: https://simon-lucas.fr/assets/papers/correlated_smith_mam2026.pdf.
- [Luc+23] **Simon Lucas**, Mickael Ribardiere, Romain Pacanowski, and Pascal Barla. "A Micrograin BSDF Model for the Rendering of Porous Layers". In: *ACM SIGGRAPH Asia Conference Papers*. SA '23. New York, NY, USA: Association for Computing Machinery, Dec. 2023, pp. 1–10. ISBN: 979-8-4007-0315-7. DOI: [10.1145/3451257](https://doi.org/10.1145/3451257). (Visited on 01/03/2024).
- [LPB22] **Simon Lucas**, Romain Pacanowski, and Pascal Barla. "Analyse Numérique de Modèles de Matériaux Poreux". In: *JFIG 2022 - Journées Françaises de l'Informatique Graphique*. Bordeaux (France), France, Nov. 2022. URL: <https://hal.science/hal-03952096>.

Thesis

- [Luc24] **Simon Lucas**. "A micrograin formalism for the rendering of porous materials". Theses. Université de Bordeaux, Dec. 2024. DOI: [10.70675/3f2098c0z2586z46a6za919z91b6f5489097](https://doi.org/10.70675/3f2098c0z2586z46a6za919z91b6f5489097). URL: <https://theses.hal.science/tel-04904484>.

ACHIEVEMENTS

- 🏆 JFIG 2022, 3rd Best Paper Award
- 🏆 JFIG 2020, Best shader at Shadertoy rendering contest
- 🏆 Nuit de l'Informatique 2018 awards

SKILLS

Python, C++, C

OpenGL, GLSL

OptiX / CUDA

Compute shaders

Ray tracing

Physically based rendering

Procedural rendering

Implicit surfaces

Deep learning

LANGUAGES

- French, native
- English

REVIEWING

- SIGGRAPH 2024, 2026
- SIGGRAPH ASIA 2025
- I3D 2024

COMMITTEES

- JFIG Best Shader, 2022 and 2023

INTERESTS

Climbing

Archery

Video games

Coding and 3D rendering