Clément Jambon
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Education

2022 - present **ETH, Zürich, Switzerland**
- Pursuing a Master of Science in computer science, graduating in Summer 2024
- Majoring in *Visual and Interactive Computing* and minoring in *Machine Learning*
- Was awarded "Honorable Mention" at the rendering competition of the Computer Graphics 2022 course with Marius Debussche for the implementation of a path tracer featuring spectral rendering, subsurface scattering and participating media

2019 - 2023 **École Polytechnique, Paris, France**
- Pursued a postgraduate engineering degree in one of France's leading schools of science and engineering
- Majored in computer science and took part in the advanced program *Image, Vision and Machine Learning*
- Led a six-month research project on optimized signed distance fields GPU rendering

2017 - 2019 **Lycée Faidherbe, Lille, France**
- Took a two-year intensive university-level (undergraduate) preparation in mathematics and physics to prepare for highly competitive nationwide exams (*Classes Préparatoires*)
- Was admitted to most of France's top-ranking schools including Mines ParisTech, École Centrale Paris, École Normale Supérieure and l'École Polytechnique

Work Experience

Oct. 2023 - Feb. 2024 **Research Intern (Internship), NVIDIA, Zürich, Switzerland**
- Working on a confidential high-performance graphics research project
- Taking responsibility in a large effort, which is likely to produce a publication
- Supervised by Thomas Müller, Merlin Nimier-David and Alex Keller

Jan. 2023 - June 2023 **Semester project, CVG lab, ETH, Zürich, Switzerland**
- Experimented with large-scale diffusion models (e.g., *Stable Diffusion*) in order to perform (significant) extrapolations in complex and multi-object *NeRF*-like 3D reconstruction scenarios. The methods investigated include *Score Distillation*, *Energy-based guidance*, *Feature fields* and *Inversions*
- Supervised by PhD student Silvan Weder and Prof. Marc Pollefeys
- Report is available here

March 2022 - Aug. 2022 **Research Intern (Internship), Inria, GraphDeco Team, Sophia-Antipolis, France**
- Took part in a full-time research project supervised by George Drettakis investigating *Neural Radiance Fields (NeRF)* and ways of editing them. This project was awarded the title of "best internship" of the computer science department at École Polytechnique and resulted in a publication presented at I3D 2023: *NeRFshop: Interactive Editing of Neural Radiance Fields*.
- Collaborated with Georgios Kopanas on a paper accepted at SIGGRAPH Asia 2022 (ToG): *Neural Point Catacaustics for Novel-View Synthesis of Reflections*
- Presented several state-of-the-art advances to the team during reading and group meetings

June 2021 - Aug. 2021 **Computer Vision Engineer (Internship), Wemap, Montpellier, France**
- Developed a robust monocular *SLAM* pipeline supporting 360-degree cameras based on indirect methods
- Devised a state-of-the-art visual positioning system for large datasets of indoor locations, see demo

Oct. 2019 - March 2020 **Teacher and Research Assistant (Internship), Institute of Technology of Cambodia, Phnom-Penh, Cambodia**
- Provided 40 second-year Cambodian students with a preparation in mathematics and physics for l'École Polytechnique's entrance exam
- Wrote a 280-page original textbook for the corresponding programme
- Organized presentations and tutorials for the robotics laboratory (e.g., introduction to Reinforcement Learning, Git, etc.)
- Led a five-month research project on Reinforcement Learning in the robotics laboratory

Oct. 2015 - Sept. 2017	**Software Developer, Artenpik, Lille, France** • Contributed to the creation of an augmented-reality platform for street-artists • Developed an image-recognition solution for large datasets of artworks • Won two hackathon prizes including First Place at "*Happy Hacking Days*" in 2015

Publications

I3D 2023	*NeRFshop: Interactive Editing of Neural Radiance Fields*, **Clément Jambon**, Bernhard Kerbl, Georgios Kopanas, Stavros Diolatzis, Thomas Leimkühler, George Drettakis
Siggraph Asia 2022	*Neural Point Catacaustics for Novel-View Synthesis of Reflections*, Georgios Kopanas, Thomas Leimkühler, Gilles Reiner, **Clément Jambon**, George Drettakis

Languages

- French, native
- English, proficient: TOEFL iBT® Test - October 2021: 111/120 (reading: 28, listening: 27, speaking: 28, writing: 28); November 2023: 102/120 (reading: 28, listening: 25, speaking: 28, writing: 21)
- German, professional (beginner)

Skills

- Software development: C, C++, CUDA, Python, Java, C#, Rust (beginner), OpenGL API, GLSL, Vulkan API (beginner, mostly *compute* pipeline)
- Computer Graphics: neural and inverse rendering (e.g. *NeRF*, *Mitsuba3+drjit*, *nerfstudio*, *Instant-NGP*), Monte Carlo rendering, physically-based simulation, geometry processing, game development with Unity
- Computer Vision: image processing, multiple view geometry, SLAM and SfM pipelines
- Machine Learning: PyTorch, Scikit-Learn, Topological Data Analysis, NLP, Reinforcement Learning, NeRF, Diffusion Models, Statistical learning theory, advanced formal languages
- Network Engineering and computer architecture: Internet and IoT protocols, CPU & GPU architecture, memory hierarchy, cybersecurity, compilation, advanced systems optimization
- Web development: JavaScript, Typescript, React, Node.js, Express.js, Django, SQL, Hugo
- Tools: Unix/Linux, LaTeX, CMake, Git, Continuous Integration (CI)
- Driving licence

Interests & Activities

- Have played the guitar for 12 years: former lead guitarist in a rock band
- Practicing hiking, trail running, road cycling and orienteering
- Current president of the *Master ohne ETH Bachelor (MOEB)* at ETH Zürich (since February 2023)
- Involved in the Cooking Society (*Ratatouille*), Arts Society (*Bureau Des Arts*), Mathematical Society and Computer Society (*Binet Réseau*) at École Polytechnique (2020-2022)
- Organised a one-week trip in Italy for 64 schoolmates (2021)
- Supervised the activities and routes of a two-day adventure race with 200 participants (2022)