

# Jean-Loup Arette-Hourquet

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French student seeking a 5–6-month final-year internship abroad in computer graphics, especially rendering and simulation. Available starting late March 2025. Open to relocation and eager to contribute to innovative projects.

## EDUCATION

### INSTITUTE POLYTECHNIQUE OF PARIS, France

2024 - present

Double Degree (MSc Equivalent) in Engineering (Master 2)

- Advanced Computer Graphics, Rendering, Animation, Simulation, Skinning, AI-generated graphics, Machine Learning, Augmented/Virtual reality, Virtual Humans
- Ranked #46 in QS World University Rankings 2025

### TELECOM PARIS, France

2022 - 2024

MSc in Engineering

- Computer Graphics, Simulation, Human-Computer Interaction, Design, Image Processing, Computer Vision, Operating systems, Fourier Transform Analysis
- GPA 3.97
- France's top ranked school for computer and digital technology

### MONTAIGNE HIGH SCHOOL (LYCEE MONTAIGNE), France

2020 – 2022

Preparatory class (Bachelors Equivalent)

- Intensive curriculum in advanced Math, Physics and Computer Science
- Nationwide competitive entrance exam for French Ivy League “Grandes Ecoles”

## PROJECTS

### RAYTRACING ENGINE

Summer 2024

- Developing a raytracing engine with C++, OpenGL and compute shaders
- Building an interface to customize the scene and materials, including color, smoothness, and reflectivity
- Implementing ray-object intersection for Spheres, Tori and triangles

### 3D ENGINE FROM SCRATCH

Summer 2023

- Building a real-time 3D rasterizer from scratch in C
- Implementing support for reading .obj files for 3D model rendering and multiple textures
- Implementing camera clipping, Z-buffer

### SCHOOL PROJECTS

- Implementing scientific papers about physics simulations
- Fluid simulations (SPH, DFSPH), Position Based Dynamics (XPBD), Rigid Bodies

## SKILLS & SPOKEN LANGUAGES

- Technical: C, C++, OpenGL, Shaders (GLSL), Python, Numpy, Java, Linux command line, Unity
- French native speaker, fluent in English (C1) and Spanish (B1)
- TOEFL: 101/120

Oct. 2023

## ACHIVEMENTS

- Internal C++ programming contest, Telecom Paris: 3rd place
- Represented the school in a team at SWERC (European Regional Contest): 39<sup>th</sup> out of 151 teams

## RESEARCH EXPERIENCE

### RESEARCH ASSISTANT (Collaboration with LIX)

September 2024-Now

- Collaborating with a PhD researcher as part of an academic project
- Developing algorithms to generate human and animal footprints (heightmap) from masks and rendering them in Unity
- Implementing grass rendering techniques using precomputed ray casting