# Pierre Mézières

## PhD in computer graphics

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## Latest International publication

**- Recursive analytic spherical harmonics gradient for spherical light**
*Pierre Mézières, Nicolas Mellado, Loïc Barthe, Mathias Paulin*
*In Computer graphics Forum (Presented at Eurographics 2022)*

**More information on pierremezieres.github.io**

## Work experience

**Since July 2022**

**Postdocal researcher** / INRIA Bordeaux
Work on La Coupole with Romain Pacanowski :
Reconstruction of SV-BRDF (**S**patially **V**arying **B**idirection **R**eflectance **D**istribution **F**unction) from many photos (several terabytes).

## Education

**From 2019 to 2022**

**PhD thesis** / STORM - IRIT / Université Paul Sabatier Toulouse
- Lighting modeling and simulation for real-time spherical harmonics based rendering.
- Advisor: Pr. Mathias Paulin.

**From 2017 to 2019**

**Master Degree - Computer Graphics and Image Analysis** / Université Paul Sabatier Toulouse
- Computer graphics: rendering, geometry, animation.
- Image analysis and processing.
- Major of promotion. I received the CIMI excellence scholarships for both years.

**From 2014 to 2017**

**Licence Degree in computer science** / Université Paul Sabatier Toulouse
- Graduated with honors.
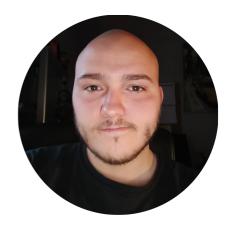- Major in the second and third year of the licence.

## Portfolio

**Design of a real-time 3D engine "Rogue"** (C++/OpenGL)
- Creation from scratch started during my master's degree.
- Oriented efficient prototyping for rendering.
- Main development platform for my PhD thesis.

**Moment Based Rendering** (C++/OpenGL)
- Implementation and comparison of six methods to compute shadows and transparency in real-time to highlight the moment-based rendering.
- Graduation project realized in group.

**See more on pierremezieres.github.io**

## Profile

PhD Candidate in computer graphics from IRIT (Institut de Recherche en Informatique de Toulouse). My PhD thesis focus on an efficient use of the spherical harmonics applied to real-time shading.

My current contributions cover direct and indirect lighting, including a little bit of differentiable rendering. An efficient use of the spherical harmonics for differentiable rendering sounds like a solid and promising avenue of research.

## Research interests

- Efficient rendering
- Spherical harmonics
- Global illumination
- Differentiable rendering

## Common use

- C / C++
- OpenGL
- glsl / hlsl
- Python

## Other

Tennis, Bicycle, Piano, Drums, Saxophone, Video games...