### Pierre Mézières

### PhD Student in computer graphics

#### International publications

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

# - Harmonics Virtual Lights: fast projection of luminance field on spherical harmonics for efficient rendering

Pierre Mézières, François Desrichard, David Vanderhaeghe, Mathias Paulin In Computer graphics Forum

- Efficient spherical harmonic shading for separable BRDF

Pierre Mézières, Mathias Paulin In ACM Digital Library (Presented at Siggraph Asia 2021)

#### **Education**



### PhD thesis / STORM - IRIT / Université Paul Sabatier Toulouse

- Lighting modeling and simulation for real-time spherical harmonics based rendering
- Advisor: Pr. Mathias Paulin



# 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 <u>CIMI</u> excellence scholarships for both years



#### Licence Degree in computer science / Université Paul Sabatier Toulouse

- Graduated with honors
- Major in the second and third year of the licence

#### **Portfolio**

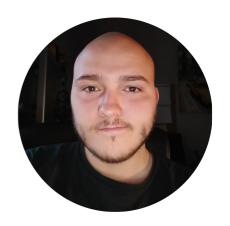
#### Design of a real-time 3D engine "Rogue" (C++/OpenGL)

- 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
- Second year master project realized in group

See more on pierremezieres.github.io



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#### **Profile**

PhD Student in computer graphics at IRIT (Institut de Recherche en Informatique de Toulouse). My PhD thesis focus on real-time shading computations using spherical harmonics.

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, Bycicle, Piano, Drums, Saxophone, Video games...