# 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 2022

- Efficient spherical harmonic shading for separable BRDF Pierre Mézières, Mathias Paulin In ACM Digital Library (Presented at Siggraph Asia 2021)

More information on pierremezieres.github.io

## **Education**

Since Oct. 2019

# **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 <u>CIMI</u> 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**

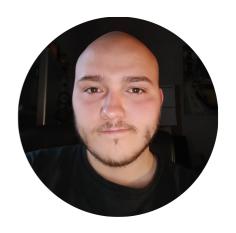
#### Design of a real-time 3D engine "Rogue" (C++/OpenGL)

- 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



- math Date of birth 11/25/1996
- ✓ pierre.mezieres1@gmail.com
- ☆ 17 Rue César Franck Revel (31250)
- % https://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...