Pierre Mézières

PhD 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

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

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Profile

PhD Student in computer graphics at 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...