

Project: Improve the rendering

Using pre-existing methods, improve the rendering pipeline seen in the lectures and the practical works. To do so, choose and implement one method from computer graphics. This method can improve the rendered images, optimize the computation times, improve the numerical stability, or modify the architecture of the rendering pipeline.

This implementation must be done in Python.

Before starting to implement, validate the method you chose by sending an email to your teacher.

Archive

The development of the project must be done on GitLab, you must invite your teacher to this Gitlab repository. The last commit before the deadline will be used for grading. Additionally, you must upload the poster describing your project in PDF on the GitLab repository.

Poster

This poster must describe the methods you choose to implement, it must show results made with your code that emphasize the improvement compared to the original rendering pipeline. The poster must also show the limitation of the method you chose, with (if possible) references to other methods that could be used to fix those limitations.

The poster should be in A2 format.

Grading

Will be graded :

- The correctness of the method implemented
- Your capacity to evaluate and vulgarize a method from the state-of-the-art
- The code quality

Teams

This project has to be done in groups of 3

Deadline

19 of April 2024

Example of methods :

- Screen space ambient occlusion
- Screen Space Reflection
- Multisample Anti-Aliasing
- Sphere Tracing
- Shadow mapping
- Alpha blending
- Stencil shadows
- Screen space shadows
- Parallax mapping
- Volume rendering
- Planar reflections