Wilhem Barbier

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wbrbr.org

Education

2022-2025 **PhD in Computer Graphics (ongoing)**, *IRIT*, Toulouse

2020-2022 **MSc in Computer Science**, *Ensimag*, Grenoble

Publications

HPG 2022 *Htex: Per-Halfedge texturing for Arbitrary Mesh Topologies*
Wilhem Barbier, Jonathan Dupuy

HPG 2022 *A Data-Driven Paradigm for Precomputed Radiance Transfer*
Laurent Belcour, Thomas Deliot, **Wilhem Barbier**, Cyril Soler

Experience

Internships

February-August 2022 **Real-time graphics research: Htex**, *Unity Grenoble*
I worked on a novel texturing method that aimed to build on top of the good properties of Ptex (fully automatic workflow, no discontinuities) while handling non-quad topologies in an efficient and elegant manner. To do so we introduced an implicit quadrangulation of the mesh that is entirely encoded by its halfedges, which allows us to handle arbitrary topologies while keeping the filtering operations GPU-friendly. This work led to a publication at the HPG 2022 conference
Skills: C++, OpenGL, GLSL, real-time rendering research

June-September 2021 **Lipsync animation generation**, *YAAARGames/ZEILT Productions*
I worked on generating lipsync animation from audio and text. I also helped on a production on rendering issues, pipeline automation, and other tasks.
Skills: C#/Unity, Python/Maya

January-May 2021 **Part-time research project on real-time GI**, *Maverick lab, INRIA Grenoble*
I implemented the initial prototype for a project that aimed to compute global illumination in real-time in a simple manner by precomputing pairs of direct and indirect renders and extracting both the transfer operator and an optimized reconstruction basis from this data. This project lead to a publication at the HPG 2022 conference.
Skills: C++, rendering research

January-August 2020 **Efficient sampling of energy transitions in the atmosphere**, *STORM lab, Institut de Recherche en Informatique de Toulouse*
I developed an algorithm to efficiently sample the energy transitions occurring in the atmosphere. It was used to accelerate the convergence of a Monte Carlo estimator of atmospheric absorption.
Skills: C++, Monte Carlo estimation, algorithmic thinking, independent research

Summer 2019 **Retina Pictonique project**, *SMAC lab, Institut de Recherche en Informatique de Toulouse*
I contributed to the development of an interactive exhibition.
Skills: Java, GUI programming, shader programming

See my website `https://wbrbr.org` for more details and other projects