JACQUES PILLET

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Software Engineer based in Marseille, France, with 7 years of full-time experience in software development, specializing in computer graphics.
Currently working at ScanLAB Projects, an award-winning creative studio in London.
Open to opportunities in computer graphics.

WORK EXPERIENCE

Lead Software Engineer 2018 - Present
ScanLAB Projects *London, UK / Marseille, France*

- Led the development of the in-house offline rendering engine (C++, Qt, OpenGL).
- Designed custom rendering pipelines for XR experiences (Unity, C#, hlsl, Objective-C, Metal).
- Built technical infrastructures for immersive installations (Python, C++).
- Designed new architectures for capturing and processing point cloud data (C++, python).
- Integrated advanced point-based graphics research into production.
- Key Projects:
  - *FRAMERATE* : Developed rendering technology and asset management pipeline (C++, python)
  - *Eternal Return*, *Buried in the rock* : Created XR Experiences for Oculus Quest, Rift, HTC Vive (Unity, C#, hlsl)
  - *Adult Children*, *Felix's Room*, *Pistol by Danny Boyle* : Implemented real time point cloud capture, processing and rendering tools (C++, OpenGL)
  - *Variants by Pierre Huyghe* : Built the real-time rendering pipeline for the main screen installation (Unity, hlsl).
  - *Explore Soane Museum website* : Developed all the 3D parts of the website (JavaScript, Three.js, glsl)

Software Engineer 2017 - 2018
Freelance *Paris, France*

- Developed Blizaar, a 2.5D visualization of a multilayer graph in the web browser (JavaScript, Three.js).
- Created a proof of concept augmented reality mobile application for a consulting firm (Unity, C#, hlsl).
- Led a team of 3 people on the development of a mobile app for Epilepsie France (JavaScript).

Software Engineer 2016 - 2017
Modis France *Paris, France*

- Developed mobile applications (Java, Apache Cordova).
- Developed website back ends (PHP Symfony) and front ends (Angular)

PROJECTS

Gfx

Developed a low level graphics API abstraction layer in C++, supporting multiple backends (Vulkan, OpenGL, Direct3D11, Direct3D12), and built a simple rendering engine with it.

GPU Path Tracer

Developed an interactive path tracer in C++ running on the GPU with OpenGL or CUDA backends,

and wrote a series of blog posts about it (GLTF Model Loading, PBR materials, volumetric, refraction, subsurface scattering, multiple importance sampling...).

SVGF

Implemented "Spatiotemporal Variance-Guided Filtering" for real time denoising of the previous GPU Path Tracer, added OptiX backend.

Vulkan Renderer

Developed a Vulkan-based renderer, featuring GLTF/Assimp scene loading, forward and deferred renderers, CPU/GPU Compute/RTX path tracing, CPU software rasterizer.

Graphics Experiments

Developped a range of demos for graphics techniques, including Voxel based global illumination, FFT based ocean simulation, Pic-Flip fluid simulation, Clustered/Forward+ rendering, Screen-space reflections, and many others.

Image Lab

Built an image processing tool running mostly on the GPU with OpenGL compute shaders, implementing a wide range of image processing techniques.

EDUCATION

CY Cergy Paris Université 2013 - 2016
MSc in Mathematics and Computer Science, with a major in computer graphics *Cergy, France*

Grenoble Ecole de Management 2013 - 2016
MSc in Management *Grenoble, France*

SKILLS

- Interpreting creative direction and converting it into practical, efficient solutions
- Solid understanding of computer graphics techniques across a wide range of applications
- Writing high-performance software and optimize code.
- Ability to rapidly learn and effectively work with large code bases
- **Programming Languages** : C, C++, C#, Python, Java, JavaScript, glsl, hlsl.
- **APIs and Frameworks** : OpenGL, Vulkan, Direct3D11/12, Cuda, Metal, WebGL, Unity3D, Three.js, Qt5, OpenCV.
- **Languages** : English, French.

LINKS

- **Personnal Website**: jacquespillet.github.io
- **Blog**: jacquespillet.blogspot.com/
- **Github**: https://github.com/jacquespillet