CESAR MOLTO MORILLA

RENDERING ENGINEER | PERFORMANCE OPTIMIZATION AND R&D SPECIALIST (PHD CANDIDATE)

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GAMEPLAY GALAXY *(REMOTE, SPAIN)*

Rendering Engineer — *December 2024 - Present*

- Worked on Trial Xtreme Freedom (Android/iOS), a mobile title with **1M+ downloads**, focusing on GPU and CPU performance optimization across large-scale levels.
- Reduced average frame time by **50%** by minimizing GPU and CPU workload through techniques such as a **custom runtime static batching system, shader optimization**, and targeted render pipeline improvements.
- Decreased **shader RAM usage by 80%** by implementing a **custom shader variant stripping logic**, ensuring lean runtime memory usage.
- Expanded the rendering pipeline and **developed custom HLSL shaders and Shader Graph nodes** for ray-marched volumetric effects, decals, water, etc...
- Collaborated with artists and level designers to integrate level-building tools and streamline visual production workflows.

SQUARE ENIX *(TOKYO, JAPAN)*

Rendering Engineer and R&D Specialist — *September 2022 - December 2024*

- Contributed to multiple **AAA titles** and internal R&D initiatives, specializing in rendering optimization, performance profiling, and feature development across PC and VR platforms.
- **Final Fantasy VII Rebirth (PC) —** Optimized the PC port from PS5 by improving mesh streaming within a **Nanite-inspired UE4 system**, achieving **30–50% performance gains** through platform-specific memory and mesh handling optimizations.
- **Triangle Strategy (VR)** — Identified and resolved critical GPU bottlenecks and draw-call overheads, reducing from **1200 to 10 draw calls (≈ 99% reduction)** to meet **72 FPS** requirements for Meta Quest certification. Eliminated ASW warping artifacts, improving UI stability and frame smoothness.
- **Unannounced Dragon Quest series VR project** — Implemented an **indirect rendering system for grass, rocks, and environmental props**, improving framerate from **40 FPS to a stable 72 FPS** in large open-world environments.
- Researched and developed experimental rendering techniques, including **Ray-Traced Tessellation-Free Displacement Mapping** and **real-time skin/hair path tracing in UE5**, later integrated into internal and production engines.

HANDY GAMES *(WÜRZBURG, GERMANY)*

Rendering and gameplay engineer — *September 2020 - May 2021*

- Worked on the mobile adaptation of **Titan Quest: Legendary Edition**, focusing on rendering and performance optimization for Android and iOS.
- Improved rendering performance through **shader arithmetic optimizations**, reducing GPU workload and ensuring stable frame rates on mobile devices.
- Optimized memory usage by **packing multiple texture channels**, lowering RAM footprint.
- Implemented rendering features for UI elements and controller-specific graphics and animations
- Integrated full gamepad support and extended gameplay logic to maintain consistent behavior across touch and controller input.

Languages: English (C1), Spanish (Native), Catalan (Native), Japanese (N3 – B1)

Skills: Performance & rendering optimization · UE4/5, Unity, proprietary engines · D3D12, Vulkan, OpenGL · HLSL, GLSL · RenderDoc, Nsight, PIX · C/C++, C#, JavaScript · Git, Perforce

Education: PhD (in progress) in Computer Graphics & High Performance Computation, MSc in Computer Graphics, Games & VR — King Juan Carlos University; BSc in Software Engineering — University of Alicante & Athlone Institute of Technology