CESAR MOLTO MORILLA

COMPUTER GRAPHICS R&D ENGINEER / PHD CANDIDATE

ABOUT ME

NATIONALITY
Spanish

BIRTH DATE
19th Nov. 1998

GENDER
Male

MARITAL STATUS
Single

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+34 620893530 / +81 08010319422

EMAIL
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LINKEDIN
https://linkedin.com/in/cesar-molto-morilla

LANGUAGES

ENGLISH
Full Professional Proficiency | CAE (C1)

JAPANESE
Elementary Proficiency | JLPT N3 (B1)

SPANISH
Native Proficiency | Mother tongue

CATALAN
Native Proficiency | Mother tongue

SKILLS

GRAPHIC API'S
DIRECT3D12 / VULKAN / OPENGL / WEBGL

GRAPHIC DEBUGGING TOOLS
NVIDIA NSIGHT / PIX / RENDERDOC

GPU PROGRAMMING
HLSL / GLSL / CUDA

PROGRAMMING LANGUAGES
C / C++ / C# / JAVA / JAVASCRIPT

VERSION CONTROL SOFTWARE
GIT / PERFORCE / MERCURIAL

OTHER
TEAM WORK / FAST LEARNER / EFFECTIVE ANALYSIS AND PROBLE-SOLVING / HIGH ADAPTABILITY

WORK EXPERIENCE

SQUARE ENIX *(TOKYO, JAPAN)*

Computer graphics R&D engineer — *January 2023 - Present*

- Research and development of experimental computer graphics features within in-house framework, followed by integration and maintenance of said features in production engines (UE4, UE5 and propietary engines).
- Worked on R&D features include: Ray Tracing Tessellation-Free Displacement Mapping and Real-Time Skin and Hair Path Tracing maintenance and integration in UE5.
- Support of AAA titles development (Final Fantasy series, The Triangle Strategy) for PC and VR platforms by researching and resolving performance bottlenecks, fixing visual artifacts, and assisting development teams in meeting milestones and deadlines.

HANDY GAMES *(WÜRZBURG, GERMANY)*

Graphics and gameplay programmer — *September 2020 - May 2021*

- Development of video game Titan Quest: Legendary Edition for Android and IOS platforms.
- Implemetation of rendering features for controller-specific graphics, UI elements and animations.
- Integration of game controller support and programming of game rules.
- Performed memory and rendering optimizations, tested and troubleshot bugs, and ensured correct documentation.

RESEARCH PROJECTS

DDP TRANSMITTANCE SHADOW MAPS *(NEAR COMPLETION)*

Research publication started as a collaboration with the computer graphics research company SEDDI in order to achieve physically accurate fabric rendering. The main contributions to the field are:

- A Dual Depth Peeling extension algorithm that accurately reproduces both transparency and translucent layered shadows of semi-transparent layered objects.
- Complete control over light interactions with individual geometry layers, enabling simulation of complex effects like auto-occlusions and, uniquely, inter-layer light scattering (not achievable by other existing approaches).
- Highly realistic and consistent results without introducing relevant visual artifacts, while maintaining computational efficiency suitable for real-time applications.

Intended Journal: Computer & Graphics

ACADEMIC RECORD

REY JUAN CARLOS UNIVERSITY *(MADRID, SPAIN)*

PhD in Computer Graphics and High Performance Computing — *2023 - Present*

Master's Degree in Computer Graphics, Games and VR — *2021 - 2023*

- GPA: 8.96 / 10

UNIVERSITY OF ALICANTE *(ALICANTE, SPAIN)*

Multimedia Engineering Degree — *2016 - 2021*

- GPA: 7.90 / 10

ATHLONE INSTITUTE OF TECH. *(ATHLONE, IRELAND)*

Software Engineering Exchange Year — *2018 - 2019*

- GPA: 8.93 / 10