

SANTI GONZALEZ

GRAPHICS ENGINEER

ABOUT

Webpage santipaprika.github.io
Residence Dublin, Ireland
Birthplace Barcelona, Spain

CONTACT

Email santi.gonzalez.cs@gmail.com
Phone +353 89 615 8093
LinkedIn linkedin.com/in/santi-gonzalez-jimenez/

LANGUAGES

English (fluent)
Spanish (native)
Catalan (native)

PROFESSIONAL EXPERIENCE

Oct 2021
Ongoing

Graphics Engineer Huawei Ireland Research Center

Member of the 3D Engine Team, within a division specialized in real-time realistic human rendering.

- Contributed to the open-source engine O3DE.
- Introduced a new Eye material reproducing cornea refraction and caustics, among others.
- Introduced a new light transmission feature for translucent materials.
- Explored efficient SSS solutions using GPU ray tracing, based on recent work published about RT-based GI.
- Explored strand-based hair rendering using a software rasterizer. This involved running through multiple iterations of the rasterizer, frequent profiling, and GPU-specific optimization using wave intrinsics and tile-based work distribution, among others.

Aug 2021
Jul 2022

Graphics Research Assistant Interactive Technologies Group (UPF) *internship*

- Explored and implemented techniques for fast hair rendering based on cards models.
- Implemented hair shading models on a ThreeJS framework.

Dec 2019
Jul 2020

Full Body Interaction Lab (UPF) *internship*

- Explored the feasibility of novel AR paradigms.
- Develop AR experiences in Unity based on heritage sites.

ACADEMIC BACKGROUND

Sep 2020
Jul 2022

M.S. Innovation and Research in Informatics Universitat Politècnica de Catalunya (UPC)

- Specialization in *Computer Graphics* and *Virtual Reality*.
- Final Project:** [A Framework for Real-Time Physically-Based Hair Rendering](#)

Sep 2016
Jul 2020

B.S. Audiovisual Systems Engineering Universitat Pompeu Fabra (UPF)

- Top 5%
- Final project:** [Augmented Reality for Barcino Roman Heritage Site through World-as-Support Paradigm](#).

SKILLS

Programming Languages

| | | | |
|------|-------|--------|-------|
| C++ | ●●●●● | C | ●●●●○ |
| HLSL | ●●●●○ | Python | ●●●○○ |
| GLSL | ●●●●○ | Lua | ●●●○○ |

Graphics Tech

| | |
|---------------------------|-------|
| DirectX 12 | ●●●●○ |
| Vulkan | ●●●○○ |
| OpenGL | ●●●○○ |
| DirectX 11 | ●●●○○ |
| GPU Ray Tracing | ●●●●○ |
| GPU Debugging / Profiling | ●●●●○ |

AREAS OF INTEREST

Translucency (SSS, OIT...), Shadowing, Global Illumination, LOD and Scalability, GPU Optimization, PBR Materials, and generalizing, most fields in the online rendering domain.

PERSONAL ACHIEVEMENTS

Conference workshop

- O3DECon:** Conference around the open-source engine O3DE.
- Pre-recorded workshop about setting up a human rendering module developed by our team.
- Workshop URL: <https://youtu.be/96js30gsouY>

Game Mod

- [Time management addon](#) for the game World of Warcraft.
- +3.5K downloads.