Daniel Martinez Amigo

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EDUCATION

University of Bath, United Kingdom 2016-2020
M.Eng in Computer Systems Engineering (First-Class Honours)

ENGINEERING EXPERIENCE

Personal Projects June 2020 – Present

SRGB: Software Renderer

- C++ Software renderer written almost entirely from scratch.
- Physically Based Rendering using Cook Torrance BRDF shader.
- Programmable vertex and fragment shaders using C++ virtual functions.
- Parallelised architecture using OpenMP.

Vulkan Rendering Engine

- Vulkan renderer written to learn the graphics API(Currently a work in progress)
- Renders PBR GLTF models using SPIR-V reflected GLSL shaders.
- Image Based Lighting from cubemapped skybox(WIP).

University October 2016 – June 2020

Final year project: BBS template matching algorithm and its application to cloud tracking

- Digital image processing based project that compared the BBS algorithm to other template matching algorithms when matching templates from sequences of clouds 15 and 30 minutes apart taken from satellite images that had been corrupted by different types and amounts of noise. Overall the BBS algorithm was deemed to be a useful method for cloud tracking, however not enough to de-throne other alternatives in either speed (Cross Correlation Coefficient) or noise performance (Ordinal Measures)

Distributed & shared memory programming

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Microprocessor and VGA controller

- For this laboratory we created a simple ALU, Register file and Program counter following a given specification for a processor using SystemVerilog. We then programmed a VGA controller that would display an image on a screen from an FPGA. We then combined the processor and the VGA controller to change the colours on the screen when different switches on the FPGA were pressed.

COMPUTER SKILLS

Programming languages:

- C++ (Experienced)
- C (Experienced)
- MATLAB (Competent)
- Python (Competent)
- Java (Basic)
- C (Basic)

Other skills and software:

- Vulkan
- OpenGL
- GLSL/HLSL
- RenderDoc
- Microsoft Visual Studio
- Microsoft Office (Word,Excel,Powerpoint)

WORK EXPERIENCE

Elthorne Park High School September 2015 – July 2016

Maths and Science Tutor

- During my final year studying A-levels, I worked after school in a paid school-run programme in which higher level students would help students from years 7-11 with subjects they needed help in. I specialised in aiding them in Maths, Computing and Science (mainly physics).

LANGUAGES

English: Fluent **Spanish**: Fluent

INTERESTS

Piano: I highly enjoy it as a hobby and allows me to be creative when playing new pieces of music.

TV, Anime and Film:

Game development:

Skii: I have been skiing since I was 3 years old. I love the sport specially off-piste skiing.