

CHRISTIAN ROBLES

Recent MSc. Graduate, Graphics Programmer

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PROJECTS

Vulkan Graphics Engine

2023 – current

Developing a graphics engine with Vulkan-Hpp, VMA, SDL2 and ImGui. Currently supports rendering of glTF models with textures, normal maps, shading, directional shadow mapping and an interactive camera. Transitioning to GPU-driven architecture to leverage indirect draws and compute shader mesh culling.

Grandma Green

2022 – 2023

Collaborated with artists, designers and developers on a virtual pet and farming simulation game with over 7,000 downloads on the App Store. Owned the delivery of garden state, crossbreeding and dailies.

Directed Research: EARS

2022 – 2023

Studied with the advisory of Professor Ulrich Neumann to implement a forward path tracer demonstrating novel techniques in Russian Roulette & Splitting from the SIGGRAPH '22 publication "EARS" by Rath et. al. Authored and shared a bi-weekly development series with 8,500+ cumulative impressions on LinkedIn.

MaterialX Standard Surface to glTF Export

2022

Worked with the Autodesk Graphics Platform team to extend look development export workflows for physically based materials in MaterialX. Contributed implementation back to MaterialX as open-source.

Ray Marching Renderer

2022

Led a team of four students in the design and development of a ray-marched signed distance function renderer demonstrating procedural clouds, displacement surfaces, constructive geometry and fractals.

WORK EXPERIENCE

Software Engineer Intern, Autodesk

2022

Extended MaterialX with the Autodesk Graphics Platform team.

Software Engineer II, Microsoft

2017 - 2021

Delivered cloud solutions with strategic partners in healthcare and finance.

EDUCATION

Master of Computer Science, Multimedia & Creative Technologies

2021 - 2023

University of Southern California, 3.73 GPA

Bachelor of Computer Science

2013 - 2017

Arizona State University

SKILLS

Programming Languages

C++, Python, GLSL, C#, TypeScript, CMake

Software & APIs

Vulkan, RenderDoc, GLM, SDL2, ImGui, Unity, Godot