

Brendan Parmer

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EDUCATION

University of Illinois at Urbana-Champaign

Aug. 2020 - May 2023

Bachelor of Science in Mathematics and Computer Science

GPA: 3.97/4.00

- Bronze Tablet, Magna Cum Laude

EXPERIENCE

Frasca International, Inc

Urbana, IL

Software Engineer, Graphics Department

May 2023 - Present

Computer Graphics Software Engineer Intern

January 2023 - May 2023

Technology: Unreal Engine 5, Visual C++, C#, HLSL, Visual Studio, Blender, Maya, Godot

- Brought a next-generation visual solution for commercial flight simulation from conceptualization to FAA qualification in a matter of months
- Ported system to use physically-based lighting values and an accurate ephemeris model for maximum realism anywhere in the world
- Evaluated research papers and libraries to implement across the software in a flight simulation context, including efficiently spawning and animating models; controlling weather conditions; terrain, light point, volumetric, and post-process shaders; seasonal foliage solutions; and effectively leveraging new technologies such as Nanite, Lumen, and temporal super resolution

Brunswick Corporation

Champaign, IL

Computer Graphics Software Intern

November 2021 - January 2023

Technology: Unreal Engine 4/5, nDisplay, C++, Python, NumPy, OpenCV, Blender, VSCode

- Gameplay programming, optimization, sound design, UI, and 3D modeling for the Future Helm, a realistic, immersive boating simulator exhibited at the 2023 Consumer Electronics Show, demonstrating new technology and serving as a platform for user testing in a virtual environment
- Built a system to generate synthetic, labelled training data using the CARLA plugin for Unreal Engine, with the ability to control variables such as weather, environments, traffic, and time of day, recording simulated RGB cameras, LiDARs, and stereocameras in near real-time

PROJECTS

NodeToPython | *Python, Blender*

July 2022 - Present

- Created an open-source Python add-on to convert Blender Geometry, Shader, and Compositing node groups into scripts, significantly speeding up add-on development for artists and programmers alike
- Add-on makes it easy to extend node groups beyond Blender's built-in functionality, making functionality like for-loops feasible

TECHNICAL SKILLS

Languages: C++, Python, HLSL, GLSL, C, HTML/CSS

APIs, Libraries, and Software: Unreal Engine 4/5, Vulkan, Blender, OpenGL, WebGL, GDAL, NumPy, bpy

Developer Tools: Git, Visual Studio, Visual Studio Code, Linux/UNIX