Joan Dot Sastre

joandot1998@gmail.com | github.com/DinDotDout

Summary

A committed graphics programmer with 2 years of professional experience and 5 years dedicated to mastering the craft. Skilled in shader programming, performance optimization, and 3D graphics. Eager to deepen my knowledge of lower-level APIs and contribute to innovative and visually stunning games. Passionate about open-source projects and refining my workflow.

Skills

Engines Godot, Unity
Coding C++, C#, GDScript, GLSL, Lua, Python
Tools Renderdoc, DAP, Git, CMake
Low level APIs Vulkan
Languages Spanish (native), Catalan (native), English (Cambridge C2 Proficiency)

Experience

Game Programmer, Game Motion 2022 – 2023

- Implemented custom 3D features to 2D procedural meshs via shader vertex folding based on camera transform and other techniques achieving a 3D look in a 2D isometric game
- Boosted performance of farthest LODs from an average of 26 fps to 60 fps using instanced rendering
- Created a system for writing specific objects to a buffer region, with unique "color" identifiers. This was interpreted as a mask at the bit level, enabling targeted shader effects on the corresponding objects
- Developed shaders for various elements including river water, diverse biome grounds, cloud backgrounds and VFX
- Devised a system enabling artists to create limitless prop variations intuitively with a single scene structure, including composition, transform manipulation and recoloring of the pieces
- Developed a 2.5D sprite-based parallax system with both horizontal and vertical parallax, zoom, and camera-tilt layer adjustment

Junior Game Programmer, Ninju Games 2021 – 2022

- Built 2D procedural map generation system with specified biome distribution and non colliding river placement
- Created prop placement and destruction system based on GDD's specifications, achieving constant world refill and specified distribution patterns over space and time
- Implemented a custom, multi-threaded game resource manager for asynchronous tracking and management of asset loading. This system also supports caching and is capable of fetching assets from remote sources when required

Projects

Marching Cloudscapes github.com/DinDotDout/marching_cloudscapes

- Developed a raymarcher shader for a skybox, incorporating physically based volumetric clouds, flat high altitude clouds and simulated atmospheric scattering
- Researched and tested many optimization techniques, achieving a consistent 144fps given optimal parameters
- Provided a broad range of customizable parameters and settings to simulate various cloud types
- Added artist drawable cloudscape maps for scenary building
- Explored various noise functions and their combinations for generating realistic cloud shapes

Godot Texture Composer github.com/DinDotDout/noise_texture_composer

- Encountered a situation where shader performance in Godot was being hindered due to multiple texture lookups, as the inbuilt texture creation utilities were using only one channel. In response, I created a tool that combined single-channel Godot noise or gradient textures into a multi-channel texture. This resulted in single shader texture lookup, significantly optimizing shader performance

DOT (Procedural Planet Game/Editor) github.com/DinDotDout/dot

- Built interactive, non-blocking procedural planet generation in the menu
- Implemented height based shader texturing on the planet
- Added randomized non colliding prop spawn
- Created three game modes: tower defense, third person sword combat and space-ship flight and shoot

Education

UIB – BS in Computer Science 2020