Robear Selwans

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Work Experience:

Graphics/Generalist Programmer at The Forge Interactive Inc. Nov. 2021 - Sep. 2024

- Debugged and Integrated features into TheForge rendering framework
- Was part of the team consulting BigBoxVR, using Unity for VR development
    - Implemented features to improve UGC performance for Population:One's sandbox mode.
    - Implemented multiple asset authoring features to allow higher visible object counts on the Meta Quest 3 VR headset without sacrificing performance.
    - Implemented high performance mesh slicing to clip large objects to the cell bounds of scene octrees.
    - Implemented realtime mesh decimation on the Meta Quest to allow the runtime creation of lower LODs for dynamic objects.
    - Implemented multiple rendering features to improve visual fidelity without sacrificing performance on the Meta Quest 2 and 3 VR headsets.

Education:

Bachelor's in Computer Engineering and Software Systems Oct. 2016 - Jul. 2021
Ain Shams University Egypt

Projects:

evol: A modular game engine

- Led the team throughout the engine's graduation project phase.
- Built the plugin framework of the engine, and wrapped all the modules to work as runtime plugins.
- Implemented the scripting plugin, using the LuaJIT compiler and allowing each module to add its types and functions to Lua through that plugin.
- Implemented the physics engine plugin, wrapping Bullet physics.
- Implemented the asset system plugin, using the Flecs ECS library.
- Helped in the implementation and debugging of the renderer module, and recently started rewriting it to have better usability.
- Continuing to work on it as a hobby project, rewriting modules to increase stability.

ImprovGFX: An offline renderer (gone on-device)

- Led the team throughout the entire project.
- Built the renderer and added OpenCL acceleration to the renderer.
- Created an accessible API for my teammates

CPU-RT: A PBR CPU Raytracer

- Basic ray-tracer implementation with glTF2.0 format support and PBR materials.

Professional References:

Wolfgang Engel

CEO - The Forge Interactive.

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