Platon Vinnichek - Resume

Rust/C/C++ Developer · Graphics Programmer

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Summary

Software Engineer with experience in low-level systems programming, performance-critical code, and computer graphics. Proficient in Rust, C/C++, modern graphics APIs and applied mathematics & physics. Comfortable working close to hardware or across layers of complex abstractions.

Projects

Lum: high-performance voxel renderer

GitHub · Rust, C++, Vulkan, WGPU

- Vulkan and WGPU (WebGPU) backends for native and WASM in web
- Dynamic radiance field probes - based global illumination
- Subpass - based deferred instanced renderer optimized for low-end tile-based GPUs
- Lightmaps
- Screen-space & voxel-space raytraced reflections
- Horizon-Based Ambient Occlusion (HBAO)
- LoD Furie transform water surface emulation
- Beer-Lambert volumetric rendering
- GPU-driven foliage rendering system
- A-Trous spatio-temporal denoising algorithm for path-traced GI

Circuli-Bellum - ROUNDS game clone

GitHub · C++, Vulkan

- 2D phyiscs with Box2D
- Distance field - based infinite MSAA (anti-aliasing) with zero overdraw
- 1D lightmaps shadows
- Visual effects: chromatic aberration, bloom

Multithreaded SIMD raytracer in C99: github.com/platonvin/rave

CPU emulator with custom instruction set: github.com/platonvin/assembler

Stack

- **Languages** Rust, C/C++, GLSL/WGSL (shaders), C# (basic), JavaScript (basic), Python (basic)
- **Graphics APIs**: Vulkan, OpenGL/ES, WebGPU(WGPU)

Education

Applied Mathematics and Physics at Moscow Institute of Physic (1 year finished)

Gold medal on IAFPHO (International Al-Farghani Physics Olympiad), 2021 and multiple internal Belarus physics contest 1st places and diplomas