

Jim van der Heijden

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[Portfolio website](#) | [LinkedIn](#) | [Github](#)

Projects

Godot Hybrid Hardware-Accelerated Ray Tracing | Vulkan, C++ 2026 | 10 weeks

- **Integrated a hybrid hardware-accelerated ray tracing pipeline into Godot's Vulkan renderer**, enhancing visual fidelity.
- **Adding a new rendering method** within a large, existing engine ensuring smooth integration.

Procedural grass rendering using indirect rendering | DirectX 12, C++ 2026 | 6 weeks

- **Researched and implemented a procedural grass rendering system** that enhances visual look while focusing on performance, handling many blades using indirect rendering techniques.
- **Built a procedural island generator** driven by height maps, with seamless integration into the grass rendering pipeline.
- **Ported an FFT-based ocean simulation** from the PS5 and **added volumetric fog** to tie the scene together visually.

Firefly | Custom DirectX 12 and PlayStation 5 Renderer, C++ 2025 | 8 weeks

- **Implemented graphics features for the PlayStation 5 API**, These features are GBuffer style rendering, PBR, shadow mapping, HDR, post-process effects, along with performance optimizations and API abstractions.
- **Integrated the renderer into two separate game engines** and handled feature requests, one targeting an FPS and the other a roguelike.

Nakon | Custom engine FPS game DirectX 12 and PlayStation 5, C++ 2025 | 8 weeks

- **Developed post-process effects, a foliage system, extended the existing particle system** to fit the game's needs, and handled **performance profiling**.
- Set up the PlayStation 5 devkit build pipeline and debugged platform-specific issues.

Skills

- Vulkan, PlayStation 5, DirectX 12
- C++, C#, HLSL
- Visual studio, CMake, Git, Perforce, Unreal engine, Unity, RenderDoc, Jira, Confluence
- API abstractions, Performance optimizations, Graphics debugging
- Dutch (native/fluent), English (fluent)

Education

Breda University of Applied Sciences Netherlands,
Breda Creative Media and Game Technologies, Bachelors Programming 2023 - Present

SintLucas Netherlands,
Eindhoven Game developer, MBO-4 2019 - 2023

Work Experience

Meliora VR Netherlands, Mierlo
Developed VR interaction systems and gameplay features in Unity. Jan 2023 - May 2023