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3D Rendering Engine

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Abstract: *3D rendering engines play a crucial role in computer graphics, gaming, and visualization applications. The ease of use of these engines depends on multiple factors, including their user interface, rendering pipeline, scripting capabilities, and optimization tools. This paper explores various rendering engines, categorizing them based on their usability for beginners, intermediate users, and professionals. Additionally, it examines the impact of rendering techniques, such as Vulkan and physically based rendering (PBR), on user experience. The study highlights the trade-offs between usability and performance, providing insights for developers and researchers in choosing the appropriate rendering engine.*

Keywords: Vulkan API, GPU optimization, custom shaders, scene management, real-time visualization

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