EMRE DOGAN

GRAPHICS ENGINEER

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LANGUAGES

C++

C#

HLSL

Python

TOOLS

Vulkan

Unreal Engine 4 & 5

Unity 2018+

Render Doc

Unreal Insights

OVR Metrics

Perforce

Git

GitHub

EDUCATION

2018 - 2022

City, University of London

BSc Computer Science with Games Technology (**First Class**)

- C++, Java, and Python
- Computer Algorithms
- Computer Graphics
- 2D & 3D Games Development

HOBBIES

Baking/Cooking

Coffee Brewing

Volleyball

Movies

Live Music

SUMMARY

I am an established graphics engineer working in VR with a year of experience in the games industry. I touch all aspects of the pipeline from tools development for designers, low level programming in Vulkan, to performance profiling using tools like Render Doc. Not only that, but I am also skilled in other areas such as web development and automation.

PROJECTS

See *More:* ***emredogan.co.uk***

UNANNOUNCED PROJECT - UE5

nDreams | September 2024 - October 2024

- Working with all disciplines to produce prototypes
- Crafting designer friendly gameplay systems

FRACKED (QUEST 2/3 PORT) - UE4

nDreams | June 2024 - August 2024

- Pre-production performance investigation
- Removal of performance intensive graphical features (bloom, volumetric effects, etc.)
- Usage of Vulkan subpasses for optimal post-processing
- Material optimization (eliminating depth resolves & reducing shader complexity)
- Implementation of UI tooling to aid artists (debug views such as Pixel Overdraw, X-Ray, & Vertex Density)
- Usage of optimization systems to achieve frame time targets (Precomputed Visibility Volumes, HLODs, Cull Distance Volumes)
- PSO Caching for both Quest 2 & Quest 3 to ensure a hitch-free first-time experience for players

GHOSTBUSTERS: RISE OF THE GHOST LORD - UE4

nDreams | November 2023 - March 2024

- Performance profiling to identify performance hotspots & hitches
- PSO Caching for both Quest 2 & Quest 3
- UI integration of Unreal Engine 4's PSO pre-compilation system
- Gameplay bug and crash fixes utilizing Jira and Sentry

REFERENCES

References available upon request.

VULKAN C++ GRAPHICS RENDERER

Personal | Feb 2022 - May 2022

- Built from ground up using thinly abstracted Vulkan API calls
- Forward renderer supporting Hardware Ray-Traced shadows, reflections, and refractions
- Rasterization pipeline supports omnidirectional shadow maps, texture mapping, and blinn-phong shading
- Viewport mouse picking implemented using stencil buffers

EMPLOYMENT

GRAPHICS ENGINEER

nDreams | November 2023 - Current

- Performance profiling for projects, identifying bottlenecks using tools such as Unreal Insights and Render Doc
- Working closely with Technical Artists to optimize runtime performance for Mobile Tiled GPU architectures
- Customizing Unreal Engine's render pipeline for optimal performance for Mobile VR platforms
- Implementing UI tooling for use by technical artists to help inform areas for performance improvement
- PSO caching & setup of PSO Pre-compilation system

SOFTWARE ENGINEER

Computacenter | July 2020 - August 2021

- Reimagined customer prototypes as 3D/VR demos using Unity and AWS Sumerian
- Streamlined stress points in team's workflow using automation tools such as PowerShell and Microsoft Azure services
- Developed machine vision equipped cross-platform mobile application using Flutter to resolve long-running problems with warehouse inventory management
- Maintained DevOps/Cloud infrastructure and customer portal using Azure, Terraform, and Node.js