



ABOUT

I'm a self-motivated third-year Creative Media & Game Technologies student at Breda University of Applied Sciences, specializing in real-time rendering and graphics programming. With hands-on experience in engine architecture, tools development, performance optimization, and gameplay coding, I adapt quickly to new requirements and technical challenges.

SKILLS

- C++
- GLSL/HLSL
- Vulkan
- OpenGL
- Unreal Engine
- Git/GitHub/Perforce
- SCRUM
- Visual studio
- RenderDoc
- Nvidia Nsight

CONTACT



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RAREȘ DUMITRU

GRAPHICS PROGRAMMER

PROJECTS

BLIGHTSPIRE

Team Size: 10

09/2024 - PRESENT

- Working as a **flexible developer** on a **one-year project**, I've developed graphic features such as **shadow rendering** and **stylized shaders**, engine features such as **implementing physics and collisions**, and even gameplay elements such as **creating a fast-paced, Quake-inspired movement** for our player.

CA-GI

Team Size: Solo

09/2024 - PRESENT

- My **personal research** project that aims at solving an approximation of **global illumination** in a **noise-free** manner using **only cellular automata in compute shaders**.

CT-CA-GI

Team Size: Solo

04/2024

- Presented at **GPC (2024)** as an **innovative noise-free** solution for **global illumination** using **cellular automata** for initial propagation and **cone tracing** to gather the first bounce information.

OWLET

Team Size: 13

05/2024 - 07/2024

- Creating graphics features and tools such as a **Grass system**, **Particle system**, **Material system**, **post processing tools**, and **shaders** for an RTS game inside a custom **C++** game engine using **DirectX12** and **hybrid ray tracing**.

RVOX

Team Size: Solo

01/2024 - 03/2024

- Familiarizing myself with **ray marching and compute concepts** by creating a **custom voxel renderer** using **OpenCL** and **C++** with stylized **per-voxel lighting** effects.

LAMBDA ENGINE

Team Size: Solo

09/2023 - 01/2024

- **Learning game engine architecture** by making a custom **C++ game engine** that supports serialization, a CPU-based particle system, **resource manager**, **Lua scripting**, **ECS integration using entt**, **complex scene hierarchies**, and much more.

MOWDOWN

Team Size: 12

06/2023 - 08/2023

- **Working closely with people across disciplines** to create a thrilling couch PvP game that combines strategic movement, intense battles, and the whimsical world of Victorian gardens.

2D RAY TRACER

Team Size: Solo

04/2023 - 06/2023

- Exploring fundamentals of **ray tracing** while optimizing everything in **C++** to run **entirely on the CPU**.

EDUCATION

BREDA UNIVERSITY OF APPLIED SCIENCES

Bachelor 2022 - 2026

- Specialization: Creative Media and Game Technologies
- Focused on: Graphics Programming | Engine Development | Game Development

GRIGORE ANTIPA COLLEGE OF SCIENCES BRAȘOV

High School 2018 - 2022

- Specialization: Mathematics and Informatics