KAROLINA MOTUŽYTĖ

GRAPHICS PROGRAMMING STUDENT

PORFOLIO

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CONTACT INFO

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SKILLS

C++
5 years
DX12
3 years
UE5
2 years
PERFORCE
3 years
Git
5 years
HLSL, CSS, PHP, MySQL
1 year

LANGUAGES

ENGLISH
Fluent
SPANISH
Fluent
LITHUANIAN
Fluent

EDUCATION

BREDA UNIVERSITY OF APPLIED SCIENCES
2022-PRESENT

VILNIAUS ŽIRMŪNAI HIGHSCHOOL
2018-2022

ABOUT ME

I am a fourth year student studying game programming in Breda University of Applied Sciences, specializing in computer graphics. I have experience with C++, DX12, UE5, GitHub and Perforce.

ROLES IN PROJECTS

2025-2026
GRAPHICS PROGRAMMER
PATH-TRACING AND GLOBAL ILLUMINATION IN DXR
- Implemented **Monte Carlo diffuse GI**
- Added **temporal accumulation denoising** for GI/DI with history reset/rejection to reduce noise at low samples.
- Implemented **soft shadows**
- Applied **ReSTIR DI for many lights**
- **Optimized** using PIX and Visual Studio Profiler:
  - Frustum culling
  - Instancing + batching
  - std::async/std::future multithreading

2024-2025
GRAPHICS PROGRAMMER
"DREADTOME" STUDENT UE5 SHOOTER
- Worked on **HLSL pixel and compute shaders**
  - Fog, "Aura" post-processing effects using **custom render passes**
- Worked with **material graphs** to create **post processing** effects
  - Glitch, double vision, corruption effects
- Used **Niagara** to create various VFX
  - Volumetric fog, push ability effect, dust

2023-2024
GRAPHICS PROGRAMMER
"CORAL ENGINE" CUSTOM ENGINE STUDENT PROJECT
- Worked on Coral Engine's PC graphics engine using **DX12** and **C++**.
- Implemented **point light rendering optimizations** using **clusters**, making it possible to render **40k dynamic lights in real time**.
- Implemented **PBR** and **Phong** shaders.
- Implemented **processing passes** and shaders
  - Mesh **outlines**
  - Color correction
  - Distance fog
- Implemented **shadow mapping**
- implemented **UI passes**
  - **Text rendering**
  - **Sprite rendering**