



Alexander POTAPOV

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SUMMARY

C++/Vulkan graphics developer. Working on rendering engine backend, shader compilers and game engine internals. Have experience with OpenGL, DirectX11 and Vulkan API. Proficient in working with large code bases, optimizing and debugging rendering code (RenderDoc, NSight). Interested in real-time rendering, low-level programming and game engine design.

EDUCATION

HIGHER SCHOOL OF ECONOMICS UNIVERSITY

2020-Now / Moscow, Russia

B.S IN SOFTWARE ENGINEERING

- Calculus, Linear Algebra, Discrete Mathematics, Software Development, Operating Systems, Computer Architecture

EXPERIENCE

NANOSEMANTICS

2020-2021 / Moscow, Russia

C++/PYTHON SOFTWARE ENGINEER

- working on programming language design, compiler design, python/C++ interop

EAGLE DYNAMICS

2021-Now / Moscow, Russia

3D GRAPHICS DEVELOPER

- working on Vulkan rendering backend, game engine internals, shader cross-compilers

SKILLS

PROGRAMMING LANGUAGES	Experienced: C++ Familiar: C# Python
SOFTWARE DEVELOPMENT	Object Oriented Programming GIT CMake GitLab CI
GRAPHICS PROGRAMMING	Deferred Rendering Physically-Based Rendering Render Graph RenderDoc
LIBRARIES	OpenGL DirectX11 Vulkan GLSL/HLSL DXVK GNU Bison/ANTLR
LANGUAGES	Native: Russian Fluent: English

OPEN-SOURCE PROJECTS

MXENGINE	General-purpose 3D game engine (deferred rendering, PBR, physics, audio, editor tools)	github
VAL	Render Graph-based Vulkan rendering library (automatic barriers, shader reflection)	github
FLUID SIMULATION	2D realtime fluid simulation from GPU Gems book (with CUDA as compute backed)	github
PATH TRACER	GLSL path tracer (based on MxEngine, supports diffuse, reflective and transparent objects)	github
MSL	Dynamic-typed programming language (Bison parser, bytecode compiler, custom VM)	github
ANGOURIMATH	Symbolic algebra library for C# (one of main contributors, worked on analytic solvers)	github

EXTRA

FAVOURITE BOOKS

- Game Engine Architecture by Jason Gregory
- Effective Modern C++ by Scott Meyers
- Modern C++ Design by Andrei Alexandrescu

FAVOURITE TALKS

- Marvel's Spider-Man: A Technical Postmortem (GDC)
- Mike Acton "Data-Oriented Design and C++" (CppCon)
- Evolving Path of Exile's Renderer (ExileCon)

FAVOURITE GAMES

- Witcher 3
- Dark Souls III
- Doom Eternal