



Alexander POTAPOV

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SUMMARY

C++ developer with 3 years of experience. Working on own open-source game engine at free time. Have experience in modern graphics APIs (OpenGL, Vulkan), game engine design and programming language creation. Interested in real-time rendering, ray-tracing and computer architecture. Creating desktop applications for personal use in C#. Writing articles on Habr (Russian) and on personal blog (English). Love to share knowledge with others, working as a personal tutor for high-school and university students.

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-Now / Moscow, Russia

C++/PYTHON SOFTWARE ENGINEER

- developed DSL (Domain Specific Language) parser and interpreter, implemented Python library for existing C++ codebase to ease development process

SKILLS

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

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