Alexander POTAPOV

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 linkedin | github
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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   *2020-2021 / 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

EAGLE DYNAMICS   *2021-Now / Moscow, Russia*

3D GRAPHICS DEVELOPER

• working on internal game engine, ported D3D11 renderer to Vulkan

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 GPUGems 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