



## Alexander POTAPOV

Moscow, Russia | +7 (985) 389-24-21

[alexander.potapov.w@yandex.ru](mailto:alexander.potapov.w@yandex.ru)

[in linkedin](#) | [github](#)  
[telegram](#) | [habr](#) | [blog](#)

## 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

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

## PROJECTS

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

## 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