

Petr Leontev

Unreal Engine Solutions

Contacts

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Skills

Core: Tech Leadership and Roadmapping, Technical vetting, Solution architecture, 3D Visualization, Cloud Rendering, Tools development, Unreal Engine 4/5, C++, Python, Node.js, Pixel Streaming, Geometry&Texture processing, Algorithms, Data Structures, Debugging, CPU/GPU framerate optimization, Multithreading techniques, AWS, VCS

Familiar: DCC tools (Houdini/Maya/Blender), C#, Python, SQL & NoSQL Databases, Math

Work experience

Founder, Lead Engineer
at [Unreal Solutions Ltd](#)

Nov 2019 – Present

My company helps startups to create Streaming technologies, Visualization platforms and Cloud Rendering pipelines powered by Unreal Engine:

1) HighArc (US): <https://higharc.com/> (The automated, all-in-one web platform for homebuilders)

I am crafting a top-notch photo-realistic visualization pipeline using Unreal Engine 5!

2) Concurrents (US): <https://www.concurrents.com/> (Unreal-based cloud / game content streaming technology GPEG)

I led efforts to:

- improve realtime asset streaming (textures / geometry / sounds / animations / skeletal meshes)
- introduce CPU/GPU optimizations (DirectX) to achieve stable frame rates
- optimize networking via multithreading approaches (win&linux sockets)
- implement timeslicing techniques to avoid GPU stalls and hitches
- enable level streaming optimizations
- investigate how to extend built-in virtual texturing system to stream texture data from the server
- design “preview streaming” tool to ease debugging process in high volume content context
- add VCS automation to the pipeline (Teamcity)

(UE4, C++)

3) Spherical Studio (US): <https://spherical.studio/> (3D framework for watershed visualization in Los Angeles)

I set up Pixel Streaming pipeline and did multiple improvements there (Google Cloud specific), established asset delivery pipeline, investigated multiview rendering in Cesium context and did profiling and optimizations to achieve stable frame rates.

4) Sber AR/VR Lab (Russia): <https://www.unrealengine.com/marketplace/en-US/product/digital-avatar-service-link> (Face Animation SDK for MetaHumans)

I developed Unreal SDK to create realistic face animations from audio files at runtime.
(UE4, C++)

5) Conundrum AI (Russia): <https://conundrum.ai> (industrial automation via AI)

I created Unreal framework from scratch to simulate high-quality visual defects on shaving razors.
(UE4, C++, vertex shaders)

6) Evovor (Canada): <https://www.evovor.com> (cloth & fashion design software EvoFashion)

I designed & developed Unreal plugins that constitute the core of EvoFashion software (cooking & packaging assets, runtime assets importers/exporters, client-server communication, runtime image loading).
(UE4, C++)

7) Unreal tech development (Worldwide):

<https://www.unrealengine.com/marketplace/en-US/profile/Unreal+Solutions+Ltd>

I am creating & publishing Unreal based plugins that add often missing Runtime features to Unreal Engine.

Senior Unreal Engine Programmer
at **1C Entertainment**

Oct 2018 – Nov 2019

King's Bounty 2. Contributions (Unreal Engine 4, C++, Python):

- 1) Tools development: road editor (texture atlases support, World Composition integration, no Houdini required), realtime blending system for dynamic lighting, FMOD preview support, landscape utilities in open world context
- 2) Engine modifications: landscape tools customization, blueprint snapping support (to speed up level design workflow), occlusion culling R&D
- 3) Codebase adaptation to YWYU ideology to improve development workflow and decrease compilation time (by 2-2.5x)
- 4) Frame rate optimization using built-in CPU/GPU profiling tools to fix Garbage Collection hitches, Async Loading time and Level Streaming bottlenecks
- 5) Build pipeline and CI support, batch processing of game content
- 6) Mentoring new members of the team to increase efficiency of onboarding process

Technical lead
at Screwdriver Entertainment

Feb 2017 – Sep 2018

POSTWORLD is Hardcore Action RPG with non-linear story and possibility to replace character body parts on the fly (Steam, 2018). What I did (Unreal Engine 4, C++ & Blueprints):

- 1) Architecture development of gameplay systems (modular characters, modular weapons, inventory, etc.) and game flow

- 2) R&D of procedural terrain generation and procedural object placement to speed up level design
- 3) UMG UI logic (in-game interfaces)
- 4) Editor extensions and plugins to speed up level design workflow

**Backend Python Developer
at [Panoramik Inc.](#)**

Dec 2015 – Jan 2017

My job responsibilities were:

- 1) Maintenance and support of mobile games backend: [Forge of Gods](#) and [Mighty Party](#) (Flask, Python, GAE, NoSQL + SQL Databases)
- 2) General improvements of the backend logic in terms of performance and scalability, with respect to time complexity, sync/async trade-off (memcache, taskqueues, cron)
- 3) Experimental migration from AppEngine to Appscale (open-source implementation of AppEngine) to significantly reduce the server costs (based on container-based virtualization techs)

Education

BSc, Applied Math, [Tomsk Polytechnic University](#) (2010 – 2014)

Professional development, Algorithmic Bioinformatics, Saint-Petersburg [Bioinformatics Institute](#) (2014 – 2015)