

## Petr Leontev

3D Engineer & Solutions Architect  
(R&D, Realtime Content Streaming, Visualization Pipelines, 0-to-1)

### Contacts

Email: [leontev.petr@gmail.com](mailto:leontev.petr@gmail.com)  
LinkedIn: [linkedin.com/in/petr-leontev](https://linkedin.com/in/petr-leontev)  
Github: [github.com/RaiaN](https://github.com/RaiaN)  
Website: [peterleontev.com](https://peterleontev.com)  
+447944239960

### Skills

**Focus on:** Solution architecture, 3D Tools development, Plugins, SDKs, Integrations, R&D, Prototyping, 3D Visualizations, Cloud Rendering, Realtime Content streaming, Data driven pipelines, Geometry&Texture processing, Algorithms, Data Structures, CPU/GPU framerate optimization, Multithreading techniques

**Tech:** Unreal Engine 4/5, C/C++, Python, Node.js (React, Typescript), AWS EC2, DirectX 11/12, VCS (Perforce, Git, Plastic), CI/CD (Jenkins CaSC, Teamcity), Windows/Linux, Docker

**Familiar:** C#, Rust, SQL & NoSQL Databases, Linux, DCC tools (Houdini/Maya/Blender), Nvidia Omniverse (Python), WebGPU, fastai (Deep Learning)

### Work experience

**Founder, 3D Engineer & Solutions Architect**  
**at [Unreal Solutions](#)**

**Nov 2019 – Present**

I strive to create top-notch Streaming technologies, Visualization platforms, Cloud Rendering pipelines and 3D tools:

1) Mawari (Canada/Japan), 2023-2024: [mawari.com](https://mawari.com) (The platform to deliver high-fidelity 3D content to mobile & XR devices):

I led several R&D projects in 3D content streaming domain: Enabling video streaming with transparency, multi-view 3D streaming for mobile devices. These projects helped company executives to determine the company strategy for near future:

- Extended Unreal Pixel Streaming pipeline to transmit Alpha channel to mobile (Android) and XR devices (WebRTC video codecs, NVENC)
- Prototyped 3D streaming demos (Unreal and Unity, WebGPU, realtime data transmission over network and rendering)
- Set up Jenkins pipeline to automate delivery & deployment of Unreal and Unity content for external XR developers

2) HighArc (US), 2022-2023: [higharc.com](https://higharc.com) (The automated, all-in-one web platform for homebuilders)

I led the development of a cutting-edge, cloud-ready, data-driven visualization pipeline for home interiors using Unreal Engine. The tech demo is accessible via web browsers and was [showcased](#)

at the International Builders Show 2023 in Las Vegas. Here are some of the results I achieved:

- AWS-based Job system for “fire & forget” Unreal rendering
- Path tracing 360 rendering (Unreal Engine, Shaders)
- Shadows, reflections, translucent reflections and data extraction from path traced Unreal scene for realtime web compositing (Python image processing libs)
- Realtime web compositing (Typescript)
- Distributed video rendering on top of AWS EC2 (Thinkbox Deadline)

3) Conundrum AI (UK), 2021: [conundrum.ai](https://conundrum.ai) (Digital Twins, Industrial AI)

I created Digital Twins framework on top of Unreal Engine to simulate high-fidelity visual defects on shaving razors. The framework is used to batch generate high-resolution input data (images) for a ML model to detect damaged razors.  
(UE4, C++, vertex shaders)

4) Evovor (China), 2020-2023: [evovor.com](https://evovor.com) (Digital Humans presentation toolkit, “frontend for AI”)

I designed & developed Unreal plugins that constitute the core of EvoFashion software (MediaPipe integration and fine-tuning for pose landmark detection, cooking & packaging of modular content, runtime assets importers/exporters, client-server communication, runtime image loading and video recording).  
(UE4/5, C++, API development, third-party software integration)

5) Concurrents (US), 2020-2022: [concurrents.com](https://concurrents.com) (Unreal-based cloud streaming technology for game content, 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++)

6) Spherical Studio (US), 2021-2022, [spherical.studio](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.

7) Sber AR/VR Lab (Russia), 2021: [unrealengine.com/marketplace/en-US/product/digital-avatar-service-link](https://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 using AI backend.

(UE4, C++, API development)

**Senior Unreal Engine Programmer (3D Tools)**  
at [1C Entertainment \(Fulqrum Publishing\)](#)

**Oct 2018 – Nov 2019**

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

- 1) 3D 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 (indie studio)

**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) Editor extensions and plugins to speed up the 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 (independent AWS Hybrid Cloud) to significantly reduce the server costs.

**Education**

BSc, Applied Mathematics, [Tomsk Polytechnic University](#) (2010 – 2014)  
Professional development, Bioinformatics and Machine Learning (2015 – 2016)  
Professional development, [Practical Deep Learning](#) (2023 – 2024)

Languages: English, Russian, Chinese (basic)