Lev Poliakov

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Software Engineer C++

Professional Summary

Highly skilled Senior C++ Software Engineer with **5+ years** of experience in developing and optimizing high-performance, real-time systems and applications. Expertise in low-latency programming, advanced graphics rendering, and multithreaded optimization. Proven track record of delivering significant performance enhancements, including up to **10x speed improvements**, reducing CPU load by **30%**, and elevating user experiences. Deep understanding of software architecture and a passion for pushing technological boundaries.

Skills

Programming & Scripting Languages: C++ (C++14/17/20), C, TypeScript, Python, Go, Bash
Graphics & Game Development: Unreal Engine 4/5, Vulkan, DirectX, OpenGL, HLSL
Performance Optimization: Multithreading, Concurrency, Low-Latency Systems, Cache Optimization, Memory Management
Profiling & Debugging: Valgrind, Visual Studio Profiler, NVIDIA Nsight, Unreal Insights, Intel GPA, RenderDoc
Networking: Socket Programming, NO_DELAY Sockets, Data Alignment (pack, alignas)
Software Development: Software Architecture Design, Data Processing & Analysis, Software Testing & Debugging, Cross-Platform Integration, Low-Level Memory Management
Tools & Technologies: Git (GitHub, GitLab), Perforce, CMake, Visual Studio

Experience

Senior Software Engineer, Veom Studio – Remote   Jan 2020 – March 2024
- **High-Performance Conveyor System:**
  - Managed **over 50,000 resources in under 2 ms**
  - Implemented advanced multithreading and custom resource movement algorithms.
  - Reduced CPU load significantly and enhanced rendering efficiency using hierarchical instanced static meshes.
- **Game Performance Optimization for *The Crust*:**
  - Increased frame rates from **4 FPS (250 ms)** to over **60 FPS (16.6 ms).**
  - Implemented comprehensive profiling and optimization strategies.
  - Drastically improved stability and user engagement.
- **Advanced Save System Development:**
  - Ensured data integrity through explicit group load ordering
  - Reduced save and load times by **90%** via multithreading and code optimization.
- **Alternative Animation System Implementation:**
  - Eliminated the need for skeletal mesh animations in performance-critical scenarios.
  - Achieved over a **10x performance increase** using vertex color-based animations.
  - Enabled dynamic animation customization for more impactful visuals.
- **Flexible In-Game Market System Design:**
  - Developed a dynamic pricing system accounting for player actions, market volatility, supply, and demand.
  - Enabled real-time economic simulations, enriching gameplay depth.
- **Quest System Enhancement:**
  - Provided designers with greater control over parameters and save points.
  - Resulted in a **200% increase in productivity** and more engaging player experiences.
- **In-Game Storage Systems Revamp:**
  - Increased reliability, more than doubling the average time between crashes.
  - Boosted performance by **30%** through code refactoring and optimization.

- **Moon Surface Resource Generation and Harvesting System:**
  - Handled generation of over **2,500,000 resource levels** across the moon surface.
  - Visualized resource levels using customizable gradients made possible by compute shaders
  - Enabled fine-tuning of generation settings for precise pattern requirements.
  - Managed dynamic resource level changes from over **20 harvesters** simultaneously.

Software Engineer, Balancy – Remote   March 2024 – October 2024
- **Cross-Platform Plugin Development:**
  - Created a plugin using **C++20**, reducing execution time and memory usage by **50%**.
  - Ensured seamless integration across multiple platforms, enhancing developer accessibility.
- **TypeScript Wrapper Creation:**
  - Facilitated multi-platform compatibility, supporting both browser and Node.js environments.
  - Increased product adoption **by 25%.**
- **Integration with Cocos Creator:**
  - Expanded plugin functionality and user base, contributing to company growth in the game development tools market.

Game Programmer, Decartel – Remote   July 2023 – April 2024
- **Combat and Camera Systems Enhancement in *Malice*:**
  - Implemented advanced targeting mechanics.
  - Developed dynamic camera controls to improve user immersion and gameplay fluidity.
- **Core Gameplay Mechanics Integration:**
  - Used Unreal Engine 5's Gameplay Ability System (GAS) for greater extensibility.
  - Optimized multiplayer responsiveness

Education

Bachelor of Science in Computer Science – Kaliningrad State Technical University   June 2022
- **Relevant Coursework**: Advanced C++ Programming, Computer Graphics, Algorithms and Data Structures, Software Engineering