

ALAN WOLFE

GAME ENGINE PROGRAMMER & GRAPHICS RESEARCHER

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WEBSITES

Technical Blog <https://blog.demofox.org/>

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GitHub <https://github.com/atrx256/>

Gigi Rapid Graphics R&D Platform <https://github.com/electronicarts/gigi>

PROFESSIONAL SUMMARY

A game engine programmer and graphics researcher with 25 years of experience.

I've been a generalist, and have also held specialist roles in graphics, audio / DSP, skeletal animation, and online engineering.

As a researcher, I have three papers published, two of which I am the first author of. I also have two patents and several technical video presentations and articles.

I created the open-sourced rapid graphics research and development platform Gigi and have a reputation in game dev as "The Blue Noise Guy" for my work promoting and advancing better sampling for low sample count real-time rendering.

SKILLS

- C++ Game Programming
- Graphics Programming
- Applied Research
- Algorithmic Creativity
- ML Basics - backprop / auto. diff. / MLP / CNNs / Optimal transport
- Engine & Software Architecture
- Python / Javascript / WebGL / DX12 / x86 Assembly / Latex / Slang / ...
- Mentorship & Leading Small Teams
- Interest in exotic computation like quantum computing and homomorphic encryption

WORK EXPERIENCE

Senior Rendering Engineer II, SEED, Electronic Arts

2022 - present

Self-led research within the future graphics team of SEED, both working alone and teaming up with other SEED members, other individuals across the company, and other academic and professional organizations. Published research papers, wrote technical blog posts, did internal and external presentations, collaborated with other researchers,

delivered usable products to game teams. Created open-sourced rapid graphics research and development platform Gigi. Mentored a handful of people.

Senior Dev Tech Engineer Graphics, NVIDIA **2020 - 2022**

Internal and external collaborations regarding graphics technology and research. Invented spatiotemporal blue noise textures, published a paper on it, and filed a patent. Fostered an internal graphics sharing/learning group to promote knowledge share and growth. Adapted the RTXGI research into the Unreal Engine RTXGI plugin. Created software called Fulcrum to ease the pains of porting rendering technology and research to the various APIs and engines. Several presentations internally and externally about the topics above.

Senior Engineer II Rendering, Blizzard Entertainment **2012 - 2020**

Audio, engine, gameplay, and rendering programming for Starcraft 2 and Heroes of the Storm. One of two rendering engineers on Diablo 4, for a year. Rendering engineer for a shared game engine initiative where I was tasked with making a modern engine meant to support all game genres on all platforms. I'd love to explain my approach to that! Many presentations on a variety of technical topics at the team and company level. Ran the Activision wide graphics forum mailing list for a year to help graphics people stay on top of modern techniques. SC2 and Heroes taught me the joy and pain of user-generated content and deterministic peer-to-peer simulations.

Senior Software Engineer, Z2Live **2012 - 2012**

Mobile game and engine development, client and server-side work, runtime, tools, engine, and gameplay. This was a short nine-month stay. I didn't find the work satisfying, so I moved on.

Lead Software Engineer, Fuelcell Games **2011 - 2012**

A small studio. I did general game, engine, and tools programming for PC and consoles. "Insanely Twisted Shadow Planet". I Was the lead of the PC team (included getting through GFWL certification!) and helped the console get out too. Game shipped and no new projects came in so the company shut down.

Senior Software Engineer, Midway and WB Games **2008 - 2011**

"This is Vegas" cancelled unreal engine based open world game. Did skeletal animation and simulation programming for PC and consoles. "Gotham City Impostors" lith tech based multiplayer first person shooter. Skeletal animation programming, client and server engine and gameplay work. Also did online engineering work to make game integrate with a community back end. Read/write data over HTTP / SSL. PC and Consoles.

Lead Engineer, inXile Entertainment**2007 – 2008**

“LineRider” on wii, pc, ds. Was the PC team lead, but did much of the Wii work as well including satisfying Nintendo lotcheck. Wrote both client and server code for game integration with a community website. HTTP/SSL communication to a php and mysql backend that both the game and community website talked to.

Senior Systems Analyst, DC Shoes / Quicksilver**2006 – 2007**

Web based software for public web store and retail partners intranet. Left to enter game dev, when I finally got a yes from a game studio.

Head Developer, Current Solutions**2001 – 2006**

Sole engineer in a 3-man company making web based software for school district management, and dealing with associated infrastructure such as server health, hosting, and wrote our client/server source control software which also pushed updated software to production when desired. Worked remotely. I was a hobbyist game dev and at this time had written from scratch things like: a MUD, a software rasterizer of 3d objects in mode13h, a multiplayer “engine” which players connected to and were sent C++ code which was parsed and interpreted and executed to play the specific game. My demo game was a space combat game. Was doing business software as a bridge to get into games.

NOTABLE PUBLICATIONS**Importance-Sampled Filter-Adapted Spatio-Temporal Sampling***JCGT.org 2025***FAST: Filter-Adapted Spatio-Temporal Sampling for Real-Time Rendering***I3D 2024***Gigi: A Platform for Rapid Graphics Development and Code Generation***GPC 2024***Spatiotemporal Blue Noise Masks***EGSR 2022***Using Blue Noise For Ray Traced Soft Shadows***Raytracing Gems 2, 2021***Simple But Effective Verlet Game Physics***GDC India 2021*