LINSHEN XIAO

Senior Software Engineer & Technical Artist — Computer Graphics · AR/VR/XR · Creative Tools · Generative AI

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SUMMARY

Senior Software Engineer and Technical Artist with 7+ years of experience across Computer Graphics, AR/VR/XR, Creative Tools, Avatar Systems, and Generative AI. Builder of large-scale creator platforms, avatar experiences, and AI-powered content-generation systems at TikTok, and immersive real-time experiences at Framestore for global entertainment and brand clients.

Strong across the full stack of interactive graphics — real-time rendering, shader and VFX development, content-creation tooling, and multimodal generative AI pipelines — and comfortable working at the intersection of engineering, design, and technical art.

Areas of expertise: Generative AI · Creative Tools · Avatar Systems · Computer Graphics · Real-time Rendering · AR/VR/XR Experiences · Technical Art Pipelines

SKILLS

Languages: C++, TypeScript, JavaScript, Python, C#, GLSL, HLSL

Graphics & Game Engines: Unity, Unreal Engine, OpenGL, WebGL, Metal, Vulkan

Creative Tools: Maya, Houdini, Substance Designer, Substance Painter, ZBrush, Photoshop

AI: LLM Agents, Generative AI Workflows, Evaluation Systems, Asset Pipelines

EXPERIENCE

ByteDance / TikTok — Senior Software Engineer

Jan 2021 – Present

Built creator tools, avatar systems, and AI-powered content-generation platforms for TikTok's global creator ecosystem.

Prompt-to-Effect Generation

- Developed and refined a Prompt-to-Effect system that transforms natural-language prompts into interactive AR effects and mini-games through automated asset generation, scene construction, and content assembly.
- Developed agent-driven workflows for asset creation, asset matching, scene generation, and automated effect production, built multimodal generation pipelines spanning image, animation, and mesh assets using state-of-the-art generative AI models.
- Designed benchmarking, evaluation, automation, and testing frameworks to improve visual quality and production reliability.
- Collaborated with engineers, designers, artists, and product teams to define the next generation of AI-powered creative workflows.

TikTok Avatar

- Developed large-scale avatar creation and customization systems supporting personalized digital identity experiences.
- Built avatar asset pipelines covering appearance customization, hairstyles, accessories, and other character content workflows.
- Partnered with designers and artists to bridge creative tooling and avatar production workflows.

TikTok Effect House

- Developed core systems for TikTok's AR creation platform used by creators worldwide.
- Built creator-facing systems and features including materials, prefabs, timelines, sound library, filters, command systems, and other content-production features.
- Designed infrastructure enabling AI-assisted content creation.
- Collaborated closely with artists, technical artists, and designers to improve creator productivity.

Framestore — VR / AR / XR Developer

Sep 2018 – Dec 2020

Developed immersive AR and VR experiences for global entertainment and brand clients.

Game of Thrones: The Dead Must Die (Magic Leap)

- Implemented real-time shaders, materials, visual effects, and gameplay systems for a mixed-reality Game of Thrones experience for HBO.
- Developed snow, fire, ice, and vertex-animation effects optimized for mobile mixed-reality hardware.
- Worked on performance optimization and rendering improvements for production deployment.

His Dark Materials: My Daemon

- Contributed shaders, UI/UX, visual effects, and gameplay features to an award-winning AR iOS app for HBO, built in Unreal Engine 4 with some of the highest-fidelity AR characters on the platform.

Air by Kenzo — 'Unity' & 'Transcendence'

- Researched real-time volumetric cloud shader technology for an interactive cloudscape at SUMMIT One Vanderbilt, running in Unreal Engine.

Additional AR / VR Experiences

- Developed interactive experiences in Unreal Engine and Unity — rendering features, gameplay mechanics, and optimization workflows — collaborating with artists and designers to deliver production-ready immersive experiences.

BioDigital — Software Engineer Intern

Jul 2018 – Sep 2018

- Improved 3D content-preview system for an interactive 3D anatomy platform by implementing particle systems, mesh interaction tools, and other workflows.
- Built a real-time WebGL 3D texture-painting tool supporting arbitrary meshes with or without UVs.

EDUCATION

University of Pennsylvania

Master of Science in Engineering — Computer Graphics and Game Technology (CGGT)

2016 – 2018 · GPA: 3.9 / 4.0

Relevant areas: Computer Graphics, GPU Programming, Animation, Game Development, Procedural Graphics, Physically Based Simulation

Sun Yat-sen University

Bachelor of Science — Information and Computational Science

2012 – 2016