

Tianpei Luo

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AI-native senior software engineer with 8+ years of experience building VR/AR platform and systems software across Meta Quest, Spark AR, Alexa, and secure networking. Expertise in spatial computing, OS-level UX, platform APIs, 3D graphics, computer vision, performance optimization, and cross-functional technical leadership. Leverages Claude Code, OpenAI Codex, and reusable agent skills to accelerate product design, engineering, and delivery.

EXPERIENCE

Senior Software Development Engineer

Mar 2022 - Present

Meta | Reality Labs VR/AR Platform | Burlingame, CA

- Develop core spatial UX features and platform capabilities for Meta Quest, including spatial window management, Scene Understanding, and Spatial Anchors, supporting a new user education framework.
- Designed and implemented the spring tethering animation system as foundational platform capability.
- Developed and launched scene-depth and segmentation capabilities for Spark AR ads, supporting monetization for AR effect creators.
- Prototyped generative AI model integration for Spark AR and developed application/framework components for the Orion AR glasses program.
- Led a visual search platform prototype across multiple surfaces, combining computer vision/ML, image processing, and media pipelines; validated technical feasibility and provided usability insights with Product, Design, and UX Research.
- Built benchmarking support for an internal recognition framework and optimized Meta Quest native integration, cutting CPU use by 50% and power consumption by 40%; added end-to-end CI tests and performance dashboards.
- Designed and implemented an OpenXR extension API for mixed-reality experiences on Meta Quest.
- Mentor engineers across teams through technical guidance and career development.

Software Development Engineer

Feb 2020 - Mar 2022

Amazon | Alexa Core Platform | Sunnyvale, CA

- Designed and implemented a scalable RPC/GraphQL API for Alexa multi-device scenarios, accelerating skill development and reducing user-perceived latency for contextual interactions.
- Built weekly business metrics and automated the dataset-query workflow with BI; optimized the transformation layer to reduce reporting effort and provide roadmap insights.
- Mentored a 2021 summer intern through project delivery and career development, resulting in a full-time return offer.

Software Development Engineer I-II

Oct 2017 - Feb 2020

Fortinet | Wireless Team | Sunnyvale, CA

- Built infrastructure and communication protocols for an access-point management server supporting secure Wi-Fi routers.
- Designed and implemented a web GUI and REST API, and refined the configuration system for readability and extensibility.
- Strengthened authentication flows to remove preinstalled or unconfirmed password paths across login methods and improve command-line usability.

PERSONAL PROJECT

BrewCapy | brewcapy.com

Coffee Community App

- Built BrewCapy from concept to public beta, a cross-platform coffee community app for iOS and Android; own end-to-end product design, engineering, testing, launch preparation, and marketing.
- Apply an AI-native workflow across product design, engineering, and marketing using Claude Code, OpenAI Codex, and reusable agent skills to accelerate implementation, content creation, and product iteration.

TECHNICAL SKILLS

AI Native: Claude Code, OpenAI Codex, agentic coding workflows, custom development skills, workflow automation

Domain Expertise: Product design, Gameplay systems, simulation, 3D graphics/rendering, VR/AR, spatial computing, OS system UX, computer vision, generative AI, distributed systems, performance optimization

Languages: C/C++, Java, Python, JavaScript

EDUCATION

M.S in Computer Science, Stevens Institute of Technology, Hoboken, NJ, 2015 - 2017

B.E in Communication Engineering, Wuhan University of Technology, Wuhan, China, 2011 - 2015