SEIJI SMITH

Software Engineer | Creative Tools, Canvas & 3D Graphics

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Software engineer building creative tools for the browser: shared canvases, GPU drawing engines, and 3D sculpting. Professional experience in WebGL CAD rendering, TypeScript, React, Go, and Unity SDKs. Live demos of the projects below are at seijismith.com.

SELECTED CREATIVE TOOLS

Kiln | Independent project | TypeScript, React, Yjs, Cloudflare Durable Objects and Workflows

- Built a multiplayer canvas that takes a design from pen sketch to concepts, multi-view sheets, marked-up revisions, and a textured 3D model, with every card and job synced live.
- Each room is a Durable Object with a Yjs document and an SQLite job log; AI jobs run as retry-safe Cloudflare Workflows, and image grids are sliced and validated into separate cards.

Voxel Sculptor | Independent project | Rust, wgpu, WGSL, WebGPU

- Built a browser clay-sculpting tool with fourteen brushes over a sparse signed-distance volume; volume edits, ray marching, and redistancing all run in GPU compute shaders, with only camera and brush data uploaded per frame.

Drawing SDK | Independent project | Rust, wgpu, WebAssembly, Swift

- Built a GPU drawing engine with WebGPU and iOS hosts: tiled raster rendering, pressure and tilt brushes, Apple Pencil predicted touches, and worker-backed SQLite persistence kept off the input path.

Sandbox Prototype | Independent project | TypeScript, three.js, Rust, WebTransport

- Multiplayer 3D sandbox for manipulating props together and recording takes; client prediction and reconciliation against a server-authoritative Rust simulation, over WebTransport with WebSocket fallback.

Animator | Independent project, in progress | Rust, wgpu, WebAssembly

- A 2D/3D animation editor for web, mobile, and desktop that layers drawings, 3D scenes, and images on one timeline; one SDK drives the editor, a CLI, and MCP clients.

PROFESSIONAL EXPERIENCE

Genies Inc. | Full Stack Engineer | Jan 2025 - Present

- Built React/Next.js admin and creator portals, plus Go APIs and OpenAPI contracts supporting avatar assets, content catalogs, and developer integrations.
- Developed generated SDKs for Unity/C#, C++, and TypeScript; designed and built durable WebSocket notifications with reconnect replay, acknowledgments, and multi-region routing.

Genies Inc. | Software Engineer, Unity | Oct 2022 - Dec 2024

- Built reusable SDK and runtime systems for external developers to create and distribute interactive experiences through a shared Unity launcher on iOS and Android.
- Designed major portions of the launcher's physics-layer and collision-matrix integration; developed dialogue tools, visual-scripting APIs, native mobile integrations, and persistent image caching.

Zea Inc. | Graphics Developer | Jun 2021 - Jan 2022

- Migrated a browser-based 3D CAD rendering SDK to TypeScript, refining render-state and shader interfaces and fixing WebGL rendering regressions.
- Built unit and end-to-end tests, CAD asset memory-test scenarios, React/Node.js integration templates, and developer documentation.

TECHNICAL SKILLS

Web: TypeScript/JavaScript, React, Next.js, three.js, WebGL, WebAssembly, WebSockets, Yjs (CRDTs)
Graphics and tools: Rust, wgpu, WebGPU, WGSL and Metal shaders, Swift, C#, Unity, pen/touch input
Services and data: Go, OpenAPI, gRPC, SQLite, PostgreSQL, Cloudflare Workers/Durable Objects/Workflows, AWS

EDUCATION

University of British Columbia | BSc, Computer Science | April 2021