SEIJI W. J. SMITH

Software Engineer | Creative Tools, Canvas & 3D Graphics

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Software engineer building interactive tools across browser, desktop, and mobile. Professional experience in WebGL CAD rendering, TypeScript, React, and Unity SDKs, with independent work on GPU drawing engines, pen input, and animation-editor architecture.

SELECTED CREATIVE TOOLS

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

- Built a reusable GPU drawing engine with WebGPU and iOS hosts, tiled raster rendering, brush tools, selection, fill, local undo/redo, and SQLite persistence.
- Implemented pen pressure and tilt, coalesced browser input, and Apple Pencil input with predicted touches; mapped pointer coordinates and pan/zoom gestures into a shared document space.
- Separated input handling from frame rendering and asynchronous persistence; added demand-driven redraws and worker-backed browser storage to keep disk work off the input path.

Collaboration and Multiplayer Prototypes | TypeScript, three.js, Rust, Cloudflare

- **Sandbox Proto** lets players manipulate 3D props together, then record, scrub, and export a take. Built client prediction and reconciliation with a server-authoritative Rust simulation, delta snapshots, and WebTransport over QUIC with WebSocket fallback.
- **Collab Circle** synchronizes live cursors through Cloudflare Durable Objects and WebSockets using batched input and adaptive interpolation.

Varyia Animator | Independent project | Rust, wgpu, WebAssembly

- Developed a 2D/3D animation editor with drawing layers and timeline editing. Established a shared authoring SDK for UI, CLI, and MCP clients across desktop, web, and mobile shells.

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
Graphics and tools: Rust, wgpu, Metal, Swift, C#, Unity, GPU shaders, pen/touch input
Services and data: Go, OpenAPI, gRPC, SQLite, PostgreSQL, Cloudflare Durable Objects, AWS

EDUCATION

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