

CARSON RITCHEY

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catson.wiki · github.com/catsonr · shadertoy.com/user/catson

Graphics & engine programmer

PROJECTS

BEATBOXX — free & open-source rhythm game 2026

C++ · Godot GDEXTension · miniaudio · Chromaprint · Drogon · Docker

beatboxx.org · github.com/catsonr/rhythm-game

- Written as a native GDEXTension against Godot's `godot-cpp` C++ bindings
- Used the `miniaudio` C library for a custom audio engine, both for music playback and for a custom node-based DSP audio editor
- Chromaprint fingerprinting identifies whatever audio a player brings, which sidesteps the licensing grey area most community rhythm games live in
- Wrote the game's database backend in C++ with `drogon` and `sqlite_orm`, Dockerized and tunneled, live at beatboxx.org

tiles — polygon-tiling puzzle game, GMTK 2026 Jul 2026

C++ · Godot GDEXTension · computational geometry

catson.itch.io/tiles

- Written for fun in 3 days in the world's largest game jam. Worked with a peer for audio and sound effects
- The engine core is a stateless geometric verifier which knows nothing about the actual game implementation
- The game itself is written in C++ using GDEXTension with Godot

webrt — ray tracer 2025

C++ · Emscripten / WebAssembly · SDL · WebGL2

github.com/catsonr/webrt

- Compiled to WebAssembly with Emscripten, rendered in-browser through SDL over WebGL2
- Hand-ported the raytracing architecture from the *Physically Based Rendering* textbook

Shaders — minimalist fragment shaders Aug 2025 – Present

GLSL · analytic procedural rendering

shadertoy.com/user/catson

- Implementations of the famous uniform tilings, derived their construction on paper and translated into a GLSL fragment shader
- Various other art pieces featuring fractals, Chladni figures, and manipulation of the 2D plane using maths
- Recreations of several country flags using their official construction sheets as fragment shaders

Earlier engines: **bbxx**, cross-platform C++/OpenGL for desktop and browser via Emscripten. **s3engine**, WebGL2 in JavaScript, playable at catsonr.github.io/s3engine.

EXPERIENCE

Software Engineering Intern — All Sober, Remote Jun 2025 – Present

Healthcare-operations platform. Currently building a patient-facing recovery-tracking app and integrating it against the company's in-house EMR. Written as a TypeScript monorepo which targets both web and mobile

Gym Attendant — Club4Fitness, College Station, TX Aug 2026 – Present

Part-time front desk attendant. I enjoy socializing and front-facing work

3D Printing Technician — i-Solids Engineering, The Woodlands, TX Feb 2022 – Aug 2022

Ran an HP Multi Jet Fusion print farm end to end. Operated the machines, post-processed and dimension-checked parts, packed and loaded freight

HONORS

- **UIL Computer Science** — team president two years in high school; 6A Computer Science award, Bronze, 2022
- **ACPC Spring Contest** — First Place, Freshman Award, April 2023
- **AP Computer Science** — score of 5
- National Honor Society · Academic All State · UIL 5A Region Solo Trombone, Gold, 2020

EDUCATION

B.S. Computer Science — Texas A&M University RELIS Fall 2026 – Spring 2029

FUN FACTS

Classical & Jazz music fan · Amateur pianist · Taught myself to read Japanese · I have a birthmark that looks like a computer mouse