

James Graham

AUDIO & GRAPHICS PROGRAMMER

Redlands, CA 92373 · Able to relocate within USA

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Summary

Experienced in creating audio-centric games and tools. Over a decade of study in digital audio production (sound design, composition), 2+ years of study in DSP programming, and 4+ years of study in 2D & 3D graphics. Specializing in C++, but proficient in a variety of languages. Currently working on an embedded C++ project which includes a robust realtime audio engine and 3D raster renderer (software/C++).

Contributions

Bitcrusher for Godot | AUDIO EFFECT (DSP)

🔗 [godot/pull/68768](https://godot.org/pull/68768)

C++, VISUAL STUDIO, MSVC, SCONS

Nov 2022

- Maintained optimal runtime performance by implementing an efficient DSP algorithm, and intentionally keeping the feature's scope narrow.
- Met the needs of Godot's userbase by adding an audio effect which is used in the types of games that Godot is often used to create.
- Wrote concise code which follows the best practices of the organization, and integrates with a large and complex codebase.

Projects

Reform | MIDI-EDITING TOOL

🌐 jamesgraham.dev 📧 m-o-marmalade/reform

LUA

Jun 2020 - Jun 2022

- The #1 most liked Renoise tool; estimated to be deployed on hundreds of machines.
- Saves hundreds of man hours for users by providing a powerful way to transform large selections of MIDI data interactively.
- Boosted performance by roughly over 100x by developing an API which fetches Renoise project data and then automatically caches it Lua-side.

Paddles | MIDI-CONTROLLED GAME

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LUA

Jul 2020 - Mar 2022

- Featured on the front page of the [Renoise website's Tools section](#) for 2 consecutive years.
- Implemented game audio by loading and editing instruments, effects, and MIDI pattern data into the current Renoise project at runtime.
- Built a 2D graphics rendering system from scratch in Lua, which displays to a grid of Renoise UI elements (colored buttons).

ConArtist | C++ CONSOLE/TERMINAL GRAPHICS LIBRARY

📧 m-o-marmalade/ConArtist

C++, WIN32 API, VISUAL STUDIO

Mar 2023 - Apr 2023

- Achieved framerate in the 1000's by implementing rendering optimizations in response to profiling analysis (lazy updating, color-based batching).
- Architected a Unicode-compatible ASCII graphics renderer with full ANSI color support, able to display 4-bit, 8-bit, and 24-bit colors simultaneously.
- Eased cross-platform development by writing highly portable C++, and decoupling the OS calls from the main systems of the library.

SNEK | CONSOLE/TERMINAL GAME

📧 m-o-marmalade/SNEK

C++, FMOD STUDIO, WIN32 API, CONARTIST, VISUAL STUDIO

Jun 2019 - Apr 2020

- Used FMOD Studio and its C++ API to playback music & SFX, beat-sync sound to player movement, and change DSP parameters based on score.
- Implemented user input, persistent high score saving, and graphical output through the ConArtist library, and the C++ Win32 API.

Skills

Technologies C++, Lua, FMOD, Godot, Unity, HLSL, GLSL

Tools Git (bash), Github, Visual Studio, VS Code, Arduino, PlatformIO

Interests Drums & Percussion, Sound Design, Music Production, 3D Modeling, Watercolor, Food, Nature

Experience

Tech Consultant, Accountant & Assistant

Colton, CA

GRAHAM ENTERPRISES

Aug 2017 - Oct 2023

- Broadened market reach by improving the business's local SEO through Google My Business and some small updates to web design.
- Reduced missed deadlines by establishing a method by which appraisers could remotely submit report photography while out in the field.
- Bolstered business's throughput and stability by supporting appraisers where needed (e.g. data entry, photography).

Education

Crafton Hills College

Yucaipa, CA

COMPLETED 32.5 CREDITS TOWARDS ASSOCIATE OF ARTS (MUSIC), GPA: 3.73

Fall 2014 - Fall 2016