

Kailen Swensen

Audio Programmer

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Skills

LANGUAGES

- C++
- C
- Unreal Engine
- Python
- JavaScript
- PureData
- JSON

TOOLS

- Wwise
- FMOD
- Version Control: GIT, SVN
- JUCE Development
- Neural Audio (Tensorflow)
- Multi-threaded Programming
- Debugging

MATH

- Digital Signal Processing
- Filter Design
- Calculus
- 3D Linear Algebra
- Fourier Transform
- Convolution
- Interpolation

Academic Projects

Audio Programmer/UI Programmer - Multi-Band Compressor

Sep 2022 - Present

JUCE (C++) - Plug-in - Solo Project

- Developed filter classes for all spectral processing in C++, such as high-pass, low-pass and band-pass filtering, using Linkwitz-Riley filters and Butterworth filters to achieve inexpensive, precise frequency shaping and control over the audio output.
- Implemented a band-splitting algorithm to properly process multiple frequency bands, enabling the creation of a versatile multi-band compressor.
- Utilized the fast Fourier transform to produce a logarithmic-scaled graph of the output frequency content, providing users with insightful real-time feedback on the sound's spectral characteristics before and after compression.
- Designed an intuitive UI with real-time feedback that shows the shape of the low-pass and high-pass filters, and the compression parameters, as well as stylized controls making the audio compression process user-friendly and visually informative.

Audio Programmer/VFX Programmer - Witchpunk (Published on Steam)

Sep 2020 - Dec 2022

Unreal Engine - Wave-based horde combat - Team of 27

- Integrated Wwise into Unreal Engine project for high-quality audio and programmed audio events and music to vary with the game and player state, enhancing the overall immersion and gameplay experience.
- Implemented initial enemy AI systems using behavior trees, providing an environment to test and iterate on player combat and movement mechanics.
- Worked closely with artists to maintain a quick pipeline for VFX implementation and iteration in Niagara, fostering a seamless integration between visual and auditory elements within the game.
- Composed music for all states of the game, cinematic/trailer audio, and designed a majority of the SFX using Reaper, ensuring the audio assets complemented the game's atmosphere and narrative.

Audio Programmer/Systems Programmer - F.F.L.A.P.

Jan 2020 - May 2020

Custom Engine in C++ - Atmospheric puzzle flier - Team of 6

- Developed an audio manager using FMOD Studio API in C++ to allow for efficient playback/streaming, optimizing audio performance and memory usage within the game.
- Added debug functionality for 3D sound and created an audio settings menu via IMGUI, enabling effective audio testing and customization options.
- Orchestrated music needed for each level of the game, composed to fit the tone of the environment, as well as designed all sound effects, enhancing the immersive experience and emotional connection for players.
- Implemented serialization and deserialization functionality into the engine using RapidJSON middleware, facilitating data management and storage for audio assets, art assets, and level construction.

Audio Programmer/UI Programmer - Deimos

Jan 2019 - Apr 2019

Custom Engine w/ C framework - Side-scrolling physics platformer - Team of 5

- Built an audio manager using FMOD Core API in C to efficiently handle audio assets and provide a seamless audio experience throughout the game.
- Created a game-state manager for efficient navigation through menus and levels, ensuring a smooth and engaging player experience.
- Programmed all UI with UX in mind to give the player an aesthetic experience, making the game visually appealing and user-friendly.
- Designed and maintained all sound libraries and most of the art assets, ensuring a consistent audio-visual experience.

Work Experience

Server/Bartender

July 2021 - Present

Skal Beerhall

- Prepared and served bar and restaurant patrons a variety of beers, crafted cocktails and nordic food dishes.
- Utilized strong communication skills and Nordic background to answer questions about the menu and build lasting relationships.
- Maintained cleanliness and organization of the bar and dining area, and restocked bar/restaurant inventory for service.

Bartender

July 2017 - July 2021

The Rock Wood Fired Pizza

- Crafted cocktails, on and off the menu, and served bar and restaurant patrons.
- Maintained bar inventory, including regular re-tapping and restocking of beer kegs, liquor, and mixers.
- Efficiently collaborated with kitchen staff ensuring quality food and beverage service in a busy dining environment.

Education

Bachelor of Science: Computer Science and Digital Audio

DigiPen Institute of Technology

April 2023

Redmond, WA

Associate of Science: Audio Engineering Technology

Honolulu Community College

May 2016

Honolulu, HI