

CHILDREN OF GAIA

Run Instructions.

Children of Gaia is in the department contrib and can be run from the terminal of any department machine with the command `cog` .

Overview.

Children of Gaia is a “psychedelic rail shooter” focusing on graphical and auditory immersion. I take inspiration from the games *Rez* and *Child of Eden*, and combine them with my own aesthetic and elements from rhythm games. The basic gameplay consists of shooting down enemies with a lock-on weapon and defending against attacks using the “defense ring” mechanic, where the player must press a key when an enemy projectile reaches a hit marker. A combo system allows experienced players to build up a high score, and players are graded on their performance at the end of the level.

Engine.

Children of Gaia uses a custom 3D game engine built over the semester as part of the Topics in 3D Game Engines course. The following external libraries were integrated into this engine:

- QT, for windowing
- OpenGL and GLM, for graphics
- fmod, for audio

In addition to the entirety of the game-specific code, these following components were implemented for this capstone project:

- Deferred lighting, a rendering technique that lowers the cost of rendering multiple lights in a scene
- Bloom, a rendering technique that blurs very bright objects in a scene
- GPU particles, a rendering technique that computes particle physics on the GPU and draws them with minimal data transfer between the CPU and GPU
- Audio integration, where fmod was integrated into my engine
- .cogs script parsing, a custom parser for “Children of Gaia Script” files used by the game

Attribution.

The music used in Children of Gaia are excerpts from DJ MURASAME's album *Free Connection*.

All sound effects were sourced from freesound.org.

All other resources are original.