

# Children of the Shred: Major Studio: Interface

## Final Project

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### ABSTRACT

This paper describes a final project done for major studio interface class. It talks about the computer game that was created for the purpose. It details the concept, research and the iterative design process followed to conceive the final working artifact. It also documents key findings during user testing and recommendations for future iterations of the game.

### Keywords

Interface final project, game, audio signals in games, music improvisation.

## 1. INTRODUCTION

In computer and video games, players engage in “action at a distance,” much like remotely manipulating a robot, but in a far more fine-grained fashion. Cognitive research suggests that such fine-grained action at a distance actually causes humans to feel as if their bodies and minds have stretched into a new space [1], a highly motivating state [2]. Children of the Shred is a real-time computer game in which two players can challenge each other’s music improvisational skills by playing out a narrative adventure by using digital or analog instruments.

## 2. CONCEPT

The objective of the game is to emulate an immersive virtual environment that is geared towards musical skill development and music improvisation. Audio signals from the players’ instruments directly affect the virtual environment and provide immediate visual feedback in the form of game characters. All learning and gameplay involves ‘playing a character.’ In a science classroom, learning works best if students think, act, and value like scientists. Games can show us how to get people to invest in new identities or roles, which can, in turn, become powerful motivators for new and deep learning in classrooms, workplaces, and everyday life [3].

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The game offers possibilities for remote skill development and improvisation unlike systems such as Rocket Networks which support the sharing of music files in order to allow musicians to collaborate on composing a piece of music together [4]; and JamSpace, which explores real-time networked improvisation, and is more focused on simple collaborative rhythmic musical scenarios, such as drumming circles, which are among the easiest ways to engage musical novices [5].

The game draws heavily from popular culture and attempts to make a common connection between music, gaming and popular culture domains. Giroux and Simon [6] have claimed that popular culture ‘raises important questions about the relevance of everyday life, student voice, and the investment of meaning and pleasure that structure and anchor the why and how of learning’ [7].

Children of the Shred is presented as a fictional post-apocalyptic scenario in which the world as we know it has ceased to exist. It is now divided into two sects – one ruled by the Zombie Lord and the other by the Zombie Slayer – who are constantly battling to rule the world. Players can choose to be the Zombie Lord and unleash zombies, which resemble Michael Jackson from 1983’s Thriller video (one of the most famous appearances of zombies on television). Or they can choose to be the Zombie Slayer and destroy their opponent’s zombies.

Conceptually the game borrows from the game ‘Typing of the Dead’. There is no obvious connection between zombies and touch-typing or guitar playing. However, as Repenning and Lewis note, learning how to type (in this case, play the guitar) is highly connected to subconscious motor skills, and hence connected to a game context such as Typing of the Dead or Children on the Shred. Both games are able to balance typing or guitar playing challenges and skills through a game context, which relates to the notion of flow [8] [9].

## 3. RELATED WORK

### 3.1 Typing of the Dead

Typing of the Dead (see Figure 1) is an educational game in which the user kills an unending stream of blood soaked zombies by typing words they are presented with. As the players typing skills improve the words increase in complexity and frequency. This is a source of inspiration and conceptually very similar to Children of the Shred. It differs in the focus of content, which is represented in two-dimensional space, and the use of a popular cultural icon.



Figure 1. Typing of the Dead screenshot.

### 3.2 Rock Band

Rock Band (see Figure 2) is a console game where players perform popular rock songs using game controllers that look like musical instruments. Children of the Shred is conceptually similar in that music is the central theme for gameplay and allows networked playing. It differs in the fact that Children of the Shred uses real instruments and a player can potentially learn to play these instruments, enhance their skills, or improvise with other players.



Figure 2. Rock Band screenshot

### 3.3 D.v.d: Watch the Beat of the Drums

d.v.d: Watch The Beat Of The Drums (Itoken, Jimanica, and Takashi Yamaguchi) is a series of generative music visualizations some aspects of which are triggered by the beat of drums (see Figure 3). It is a source of inspiration for using a game as live performance visualization. In this respect, Children of the Shred has the potential to be used as a visualization of gameplay and improvisation.

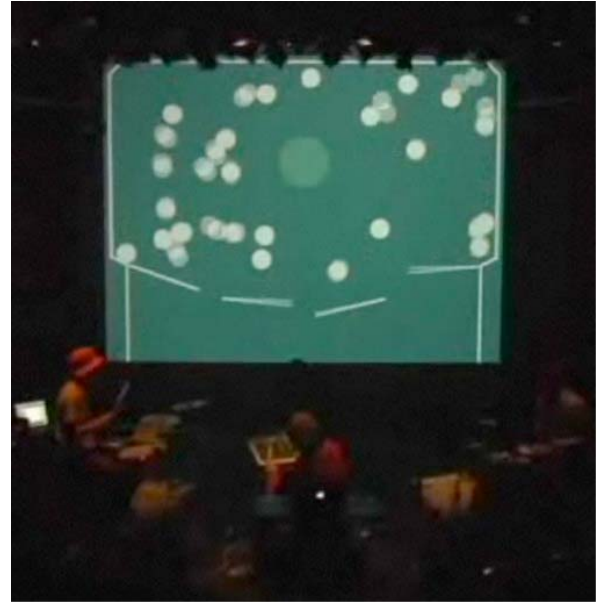


Figure 3. D.v.d: Watch the Beat of the Drums

### 3.4 JamVOX – Jam and Practice Tool for Guitar

JamVOX - Jam and Practice Tool for Guitar is a software program that guitar players can use to jam with or practice playing their favorite songs (see Figure 4). Players can choose from a variety of guitar effect presets or build their own. Using different effect presets is one of the similarities Children of the Shred has with this application. It differs in that it allows two players to participate at the same time.



Figure 4. JamVOX screenshot

### 3.5 eJamming AUDiiO

eJamming AUDiiO (see Figure 5) is a program that enables musicians to collaborate and record music online. eJamming also produces software that can broadcast these sessions in real-time. This is similar to Children of the Shred in that it enables users to jam over a network in real-time. eJamming AUDiiO is not a game and is meant for serious musicians.



Figure 5. eJamming AUDiO screenshot

## 4. METHODOLOGY

### 4.1 Audience Definition

Children of the Shred is aimed at 16-30 year old individuals who are occasional gamers and musicians, interested in learning to play an instrument, want to enhance their instrument playing or music improvisational skills, or want to jam with their friends.

### 4.2 Scenarios

The first step in production was to devise scenarios to better understand the potential audience for the game.

#### 4.2.1 Scenario 1

Juan, Milos and Steve met each other at Bonaroo (see Figure 6). They all played an instrument, listened to the same music, and loved horror movies! They hung out, jammed, and talked about movies during the festival, but had to part at the end promising to keep in touch. They weren't really able to keep in touch until Milos found 'Children of the Shred'. Now they meet online almost everyday for a couple of hours and bond over music and zombies.



Figure 6. Scenario 1: Juan, Milos, and Steve.

#### 4.2.2 Scenario 2

Alyssa is 15, rebellious, and just knows she's going to be a rock star (see Figure 7). Only one problem - she has to learn the guitar, fast! Her parents grudgingly bought her 'Guitar Hero' - she thought this would be a great starting point. After a few months, Alyssa realized that it had nothing to do with real guitar. Frustrated, she started looking for a tutor. She found the perfect person - 19-year-old Deb. Only problem was, Deb was all the way across the country. Fortunately, Deb tells Alyssa about 'Children of the Shred' where they can practice together, and Alyssa is now well on her way to becoming the next teen rock star!



Figure 7. Scenario 2: Alyssa.

### 4.3 Survey

An online survey was conducted to understand our audience with regards to their general jamming, music playing and gaming habits. The survey elicited 54 responses of which a majority classified themselves as occasional musicians and casual gamers. (Figure 8)

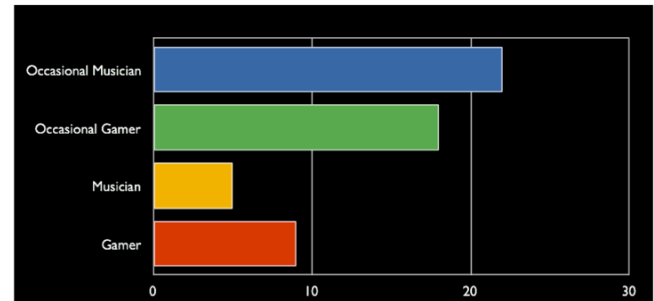


Figure 8. Most respondents were occasional musicians and gamers.

#### 4.3.1 Results

- The target audience showed an interest in zombie-related and music/rhythm-based games.
- They preferred to play music with others in a shared space or play along with songs on their computer.
- The most popular instrument was the guitar. This was our obvious choice for the prototype.
- The most popular game was Guitar Hero.
- 40% of the respondents preferred to jam with real instruments.



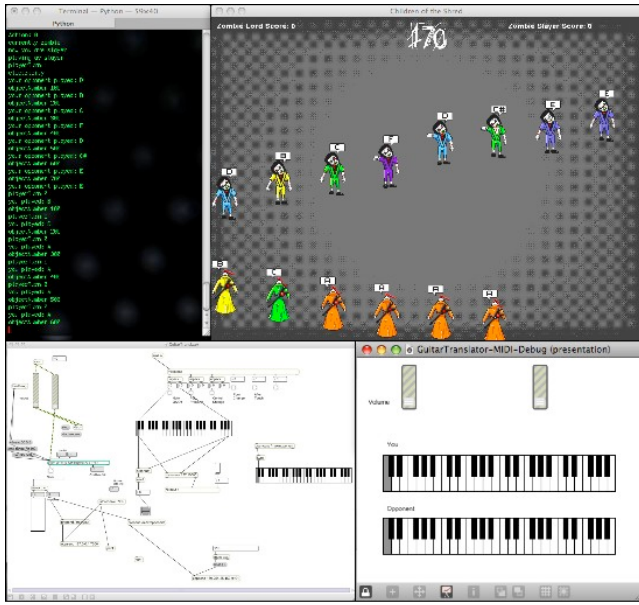


Figure 12.1. Hi-Fi Prototype

## 5. IMPLEMENTATION

### 5.1 Rules of the Game



Figure 13. Screenshot of gameplay

- The entire game is a timed game and can be played for 180 seconds.
- Players play in turns. Each player can play a string of 8 notes each turn.
- The objective is to destroy your opponent's zombies or slayers by playing back the corresponding notes.
- Each zombie or slayer destroyed will earn a player points.
- Each zombie or slayer missed will deduct a player's points.
- The points are based on response time. The sooner a player responds the more points they stand to gain.

- Players receive feedback for when they are doing well or badly during gameplay.

## 6. TESTING

The game was set up on two networked computers in a large room. Two guitars, with amplification, were hooked up to the computers. The screen from one of the computers was projected on the wall so that users could see it clearly and the game could be tested for its live performance visualization potential. Users were invited to play the guitar and test the game. A number of people came by and tested the game. Some of them knew how to play the guitar, while others were complete novices.

## 7. RESULTS

Users were responsive to the game and gave a lot of valuable feedback. Short interviews gave us more insight about what users experienced while playing the game. Here a list of some of the feedback:

### 7.1.1 In-Game Tutorial and Incremental Skill Levels

Many users would like to have a tutorial that would show them how to play the guitar and the game. There were also suggestions for breaking the game down into levels that start with using one string and graduate to using all six strings.

### 7.1.2 Tablature and Notation Reference

Many users recommended including a tablature or visual reference, which would indicate where to play the note on the guitar fretboard.

### 7.1.3 Accuracy, Immediacy and Network lag

The game did not perform as expected over the network. There was often a network lag, which would cause at least a two second latency between when the note was played and when something appeared on the screen.

### 7.1.4 Input Levels

Some users recommended including an input level indicator, which would be a visual cue indicating if a user's instrument sound is coming through to the system.

### 7.1.5 Pause Between Turns

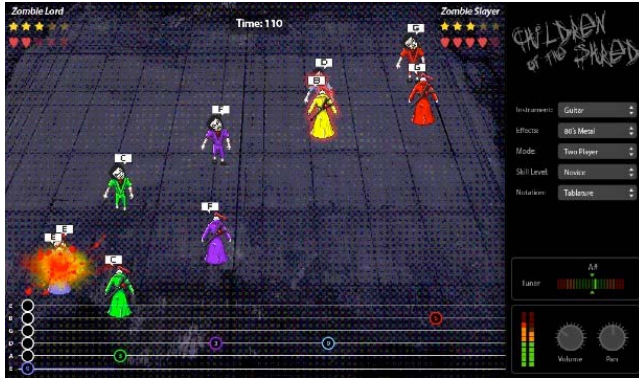
Many users recommended a longer pause between turns, so that there is enough time to assimilate the information and be ready to respond.

### 7.1.6 Health Meter

Some users recommended using a health meter as opposed to a scoring system. They felt the scoring was rather arbitrary and didn't really make a difference.

## 8. FUTURE

Figure 14 shows a visual representation of what Children of the Shred might look like in the future with user feedback integrated.



**Figure 14. Future of Children of the Shred**

In addition to feedback from the user testing, here are some other potential enhancements:

- Open source – Release the game to the open source community and enable them to take it forward to the next level.
- Save game as audio file – Introduce the ability for users to save their games as audio files and possibly share them with friends.
- Console game – Port the game over as a console game so that it can be played on popular consoles like PlayStation and Xbox.
- Support multiple instruments – Expand the game to include a wide array of instruments that can be used to play the game.
- Single player, multiplayer – Enable more than two players to connect and play the same game. This will prove useful in group/band scenarios.
- Jam along with songs – Introduce the ability to upload/download your favorite songs and jam along with them.
- Levels, maps, 3D – Introduce skill levels in the game and add the ability to customize scenarios, characters and elements within the game. Build the game in a three dimensional space.
- Performance mode – Add a performance mode that enables users to play the game while playing a live performance.
- Improvisation – Introduce the ability to actually improvise with the music an opponent plays rather than simple call and response.

## 9. CONCLUSION

In conclusion, the game can be situated within multiple domains including games, learning, cognitive science and cultural studies. It has the potential to be used as a tool for learning to play a musical instrument and enhancing music improvisational skills. It offers a novel platform for virtual jamming and musical collaboration. The game also lends itself to potential use as a live performance visualization tool.

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