Video Game Audio

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VideoGameAudio.com
Overview

- Introduction
- Directions in game audio
- Lessons learned
- Questions
Introduction

• 1994 – *NBA Live '95* - Sega Genesis (EA)
Introduction

• 2005 – Surrey Remixx Project (Techlab)
Introduction

• 2003 – Soundtrack for the film The Corporation

The Corporation

Original music for the film composed and produced by Leonard J. Paul
Introduction

• 2007 – *Monster Lab* (Wii / NDS)
Introduction

• 2008 – *Facebreaker* – X360, PS3 (EA)
Introduction

- Electronic Arts Canada
- World's largest game studio—1500 employees
Game Audio

• 1977 – Atari VCS / 2600
• 1 mhz processor, 16 colours...

Combat (1977 Atari)
Game Audio

- Combat = 2KB ROM!
- 2 Voices

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Game Audio

- Playstation 3 Audio (2008)
- 512+ channels of Atrac3 10:1 decompression
- 32MB of memory on average for audio
- One 3.2ghz core (of 7) dedicated to audio
- Convolution reverb, realtime multiband compression, physical modeling, granulation, 3D waveguide reverb mesh simulation, digital 7.1 ..
Game Audio

Are we “done”?
Tools

• Tools: Isact
Tools

- Tools: FMOD
• Tools: Wwise
• Tools: Unreal Kismet Editor
• Tools: Pure Data
“2-D” Game Audio Dilemma

• Brandenburg Concertos (Bach) – c.1721
• Samples are pre-generated, like 2-d graphics
• Examples:
  1. Computer synthesized
  2. MIDI score
  3. Synth Performance
  4. Live Instruments
• How to improve game audio?

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Granulation

- Split a sampled sound into small “grains”
- Playback of grains allows us independent control of frequency and tempo
Concatenative Synthesis

• Uses grains of one sound to approximate the original sound, like an “audio mosaic”
• Good for making new textures that are similar

Figure 1: Photo-Mosaic  Figure 2: Detail of Figure 1
Conclusion

How do we make audio for games more expressive?
Questions?

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Video Game Audio Articles
by Leonard J. Paul

Leonard Paul attained his Honours degree in Computer Science at Simon Fraser University in BC, Canada with an Extended Minor in Music concentrating in Electroacoustics. He teaches video game audio at the Vancouver Film School and has a thirteen year history in composing, sound design and coding for video games working for companies such as Electronic Arts, Backbone Entertainment, Radical Entertainment, moderngroove entertainment, Rockstar Vancouver and Black Box Games.