

2011 Audio4Visuals:: ::Game Sound Design

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Overview of Games Industry

- Worldwide weekend sales for Grand Theft Auto IV exceeded \$500 million vs. Harry Potter 6's sales of \$394 million¹
- However, film industry is still larger due to DVD sales, rentals, TV rights etc...
- Growing markets are downloads and online
- “AAA” games \$15+ million budget
- Halo 3: \$55M + \$200M marketing²
- So, video games are big business

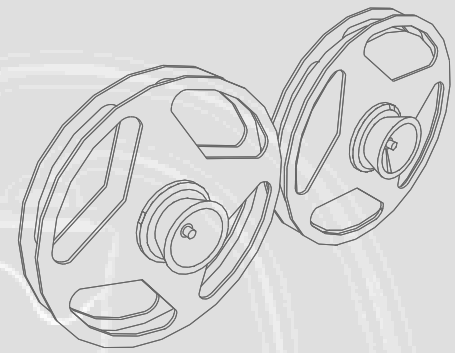


Game Salaries

- US mainstream video game industry salary in 2009 average was \$75,573 USD (~£48K)
- Sound designers and composers earned an average of \$82,085 (~£52K)
- Most game audio professionals tend to be more experienced

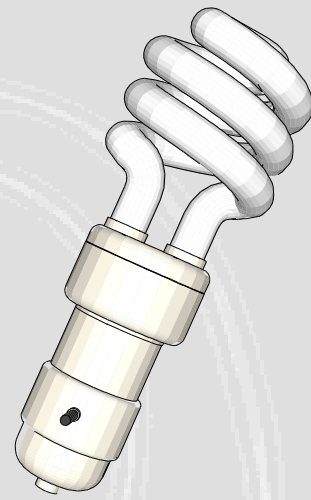


Games vs. Film



- Games ::
- **Interactive:** Hard to predict what will happen
- **Technology:** Changes frequently + code
- **Timescale:** Time experience is often longer
- **Creativity:** Game design often very flexible
- **Heirarchy:** Much flatter in games in general
- **Salary:** Full-time job more likely in games

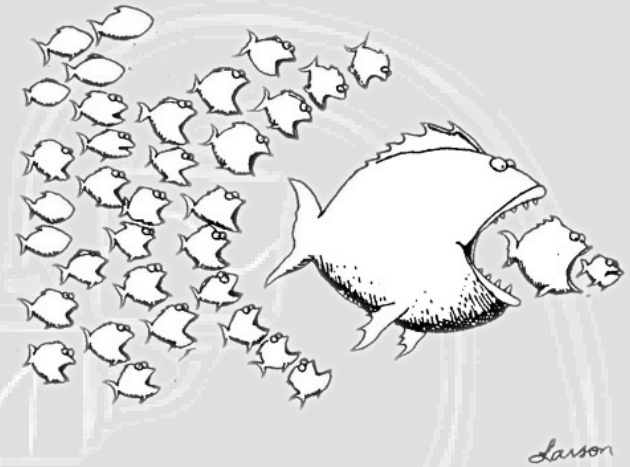
Sound Design



- **Creative** :: Design, style, recording, synthesis, editing, compositing, mastering
- **Technical** :: Define how the sound reacts to physics & environment to select or generate the sounds to trigger, where to store
- **Production** :: Purchase libraries, recording schedule, code schedule for complex real-time sounds such as engines and crowds

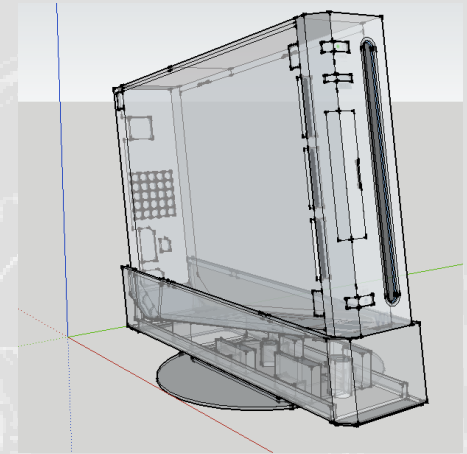
Design

- **Top-down:** Figure out your “big idea” and worry later about how to actually do it
- **Bottom-up:** Determine what tools can do and figure out creative ways to get the most of them
- Typically one alternates between the two as technical issues and process limitations will force you to be more resourceful

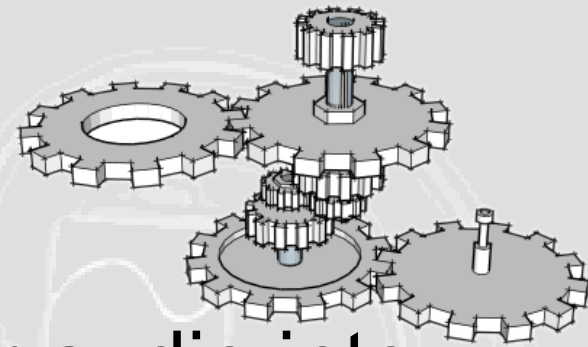


Technical

- Discover the limits of the software and hardware and push them
- Expand the software capabilities and design better audio tools to suit the game
- You will often be pressed by the team for storage space & CPU, so hold your ground
- Things can work one day and be broken (and useless!) the next



Organization



- What do you need to do to get your audio into the game? Over-prepare for the worst
- What tools and resources are you going to use and what software will support your creative design? Work well with your coder & producer
- A good process can be found by making all the right mistakes once and taking risks - exciting!
- Audio is always last, so be prepared for feature drop, no money, no time & no love

Examples

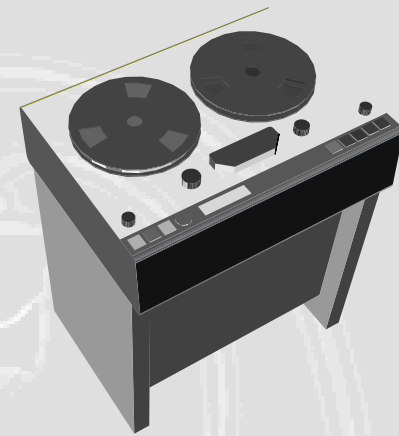
- Synthesis – Gives that “classic age” of gaming sound
- Samples – Great at capturing real sounds but difficult to change
- Software – Use game parameters to modulate sounds

Synthesis

- In Retro City Rampage almost all sounds are synthesized from pulse, triangle and noise waves
- Mod tracker allows sound artist control over parameters and mix of synthesis and samples but is also tricky to learn
- OpenModPlug Tracker is free¹

#0	1: Pulse1	2: Pulse2	3: Tri	4: Noise	5: DPCM
00	C-3 01 .. E33	G-3 01 .. E33	E-2 05 v00RCE	C-2 06 ..	...
01	v22R00	A#2 06 v64E00	...
02	v64R00	...	...
03	b00E00	...
04	b00R00	b00E00	...
05	R00	...	...
06	b00R00	b00E00	...
07	b00E00	...
08	b00R00	b00E00	...
09	R00	...	...
0A	b00R00	b00E00	...
0B	b00E00	...
0C	b00	b00E00	...
0D	b00R00	...	...
0E	b00R00	b00E00	...
0F	b00R00	b00E00	...
10	C-8 04 v41D0F	...	b00	b00E00	...
11	b00	b00E00	...
12	b00R00	b00E00	...
13	...	F#9 04 v46D0F	b00	b00E00	...
14	b00R00	...	...
15	...	G-8 03 v38D0F	b00	b00E00	...
16	F#8 02 v56D0F	...	b00	...	...
17	b00R00	...	...
18	b00R00	b00E00	...
19	F#8 02 v56D0F	...	b00	b00E00	...
1A	C-8 04 v00	...	b00	b00E00	...
1B	F#7 01 v48D0F	F#9 04 v46D0F	b00	...	...
1C	b00E00	...
1D	C-8 04 v41D0F	...	...	b00E00	...
1E
1F	b00E00	...
20	b00E00	...
21	...	G-8 03 v38D0F	...	b00E00	...
22
23	C-8 01 v27D0F	...	...	b00E00	...
24
25	b00E00	...
26	F#8 02 v56D0F	...	...	...	...
27	C-8 04 v00	F#9 04 v46D0F	DF2	b00E00	...
28	F#7 01 v48D0F	...	000	b00E00	...
29	000	...	...
2A	000	b00E00	...
2B	000	...	...
2C	000	b00E00	...
2D	...	G-8 03 v38D0F	000	b00E00	...
2E	000	...	...
2F	000	b00E00	...
30	000	b00E00	...
31	000	b00E00	...
32	000	...	...
33	000	b00E00	...
34	b00E00	...
35	b00E00	...
36
37	b00E00	...

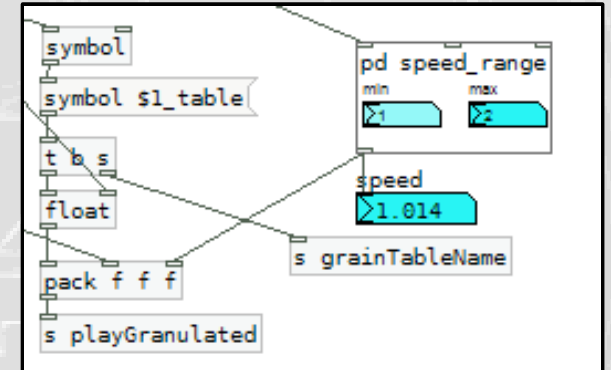
Samples



- Often we are asked to duplicate an existing set of sounds that were placeholder
- I'll often combine samples with synthesis to give a cleaner sound with full harmonics
- Great for linear gameplay where we can predict what will happen during the length of the sample
- Do we need to fill the entire memory or is quality win over quantity ?

Procedural Sound Design

- Generate audio in real-time based on rules and behaviours
- Has been used in games since the beginning
- Parametric, generative & real-time (ie. flexible)
- Can combine samples with synthesis
- Allow flexibility of layers and real-time effects instead of stereo mixdown

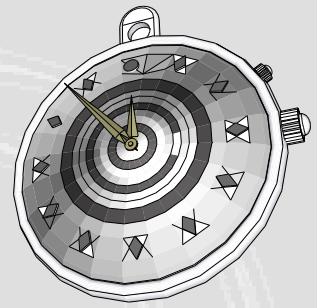


Layered Ambience



- A layered ambience is made up of several different loops
 - Country ambience could consist of frogs, wind, birds and flies
- Reactive ambience would have frogs and birds disappear for a while after a gunshot
- Flies would decrease with wind and vice-versa

Time-of-day Ambience



- City ambience of horses, dogs, distant wolves and crows could react to time
- Crows and wolves would trigger randomly with more crows during the day and wolves at night
- Horses would be more present during the day and dogs during morning & early evening hours
- This approach is less likely in more advanced games where all these elements are simulated

A Job In Game Audio



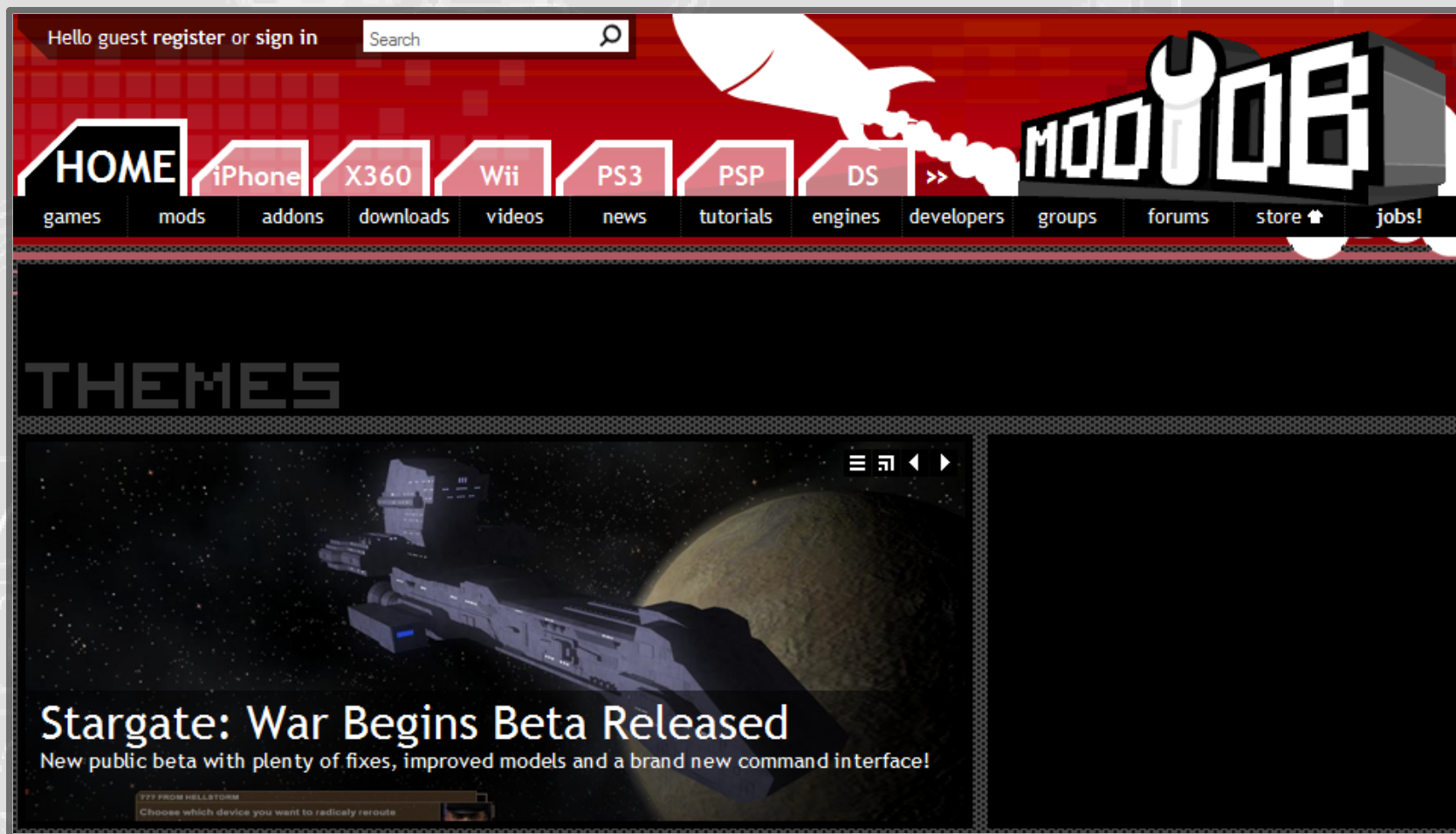
Electronic Arts Canada, Burnaby, BC

How Do I Get Into Games ?

- Research game audio and student sites
- Participate in forums such as SoundDesign on Yahoo¹
- Play games and critique the audio
- Learn tools like Wwise and Fmod
- Play with languages like Pure Data or Max/MSP
- Start making games: www.moddb.com



ModDB



Game Career Guide

The screenshot shows the homepage of the Game Career Guide website. The header features the UBM TechWeb logo in the top left. Below it, on the left, is a large vertical banner with a cartoon character and the text 'GAME CAREER GUIDE'. The main navigation bar includes links for News, Features, Schools, Digital Counselor (marked with a 'NEW' tag), Student Games, Jobs, Community, Store, and Contact Us. Search and email subscription fields are located in the top right. The main content area is divided into three columns. The left column contains a 'MEDIA PARTNERS' section with a logo for Gamasutra. The middle column features a 'Need Help Choosing the Right School?' section with a 'DIGITAL COUNSELOR' banner and a 'GETTING STARTED' section. The right column has a 'FEATURED SCHOOLS' section highlighting Southern New Hampshire University (SNHU) as a 'BRONZE' award winner, and a 'NEW! Download & Play Student Games!' section featuring 'The Power of Paint!' as a '2009 Winner!'.

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GAME CAREER GUIDE

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Need Help Choosing the Right School?

DIGITAL COUNSELOR

CLICK HERE!

GETTING STARTED

Let us help you get started on the right track!

CLICK HERE!

FEATURED SCHOOLS

BRONZE Southern New Hampshire University - SNHU
--Manchester, NH

Southern New Hampshire University

Focus on story, design, production, technology and/or the business of gaming with Southern New Hampshire University's game design and development degree program. Choose between a business focus (B.S.) or a liberal arts focus (B.A.).

Featured Schools | All Schools | Add A School

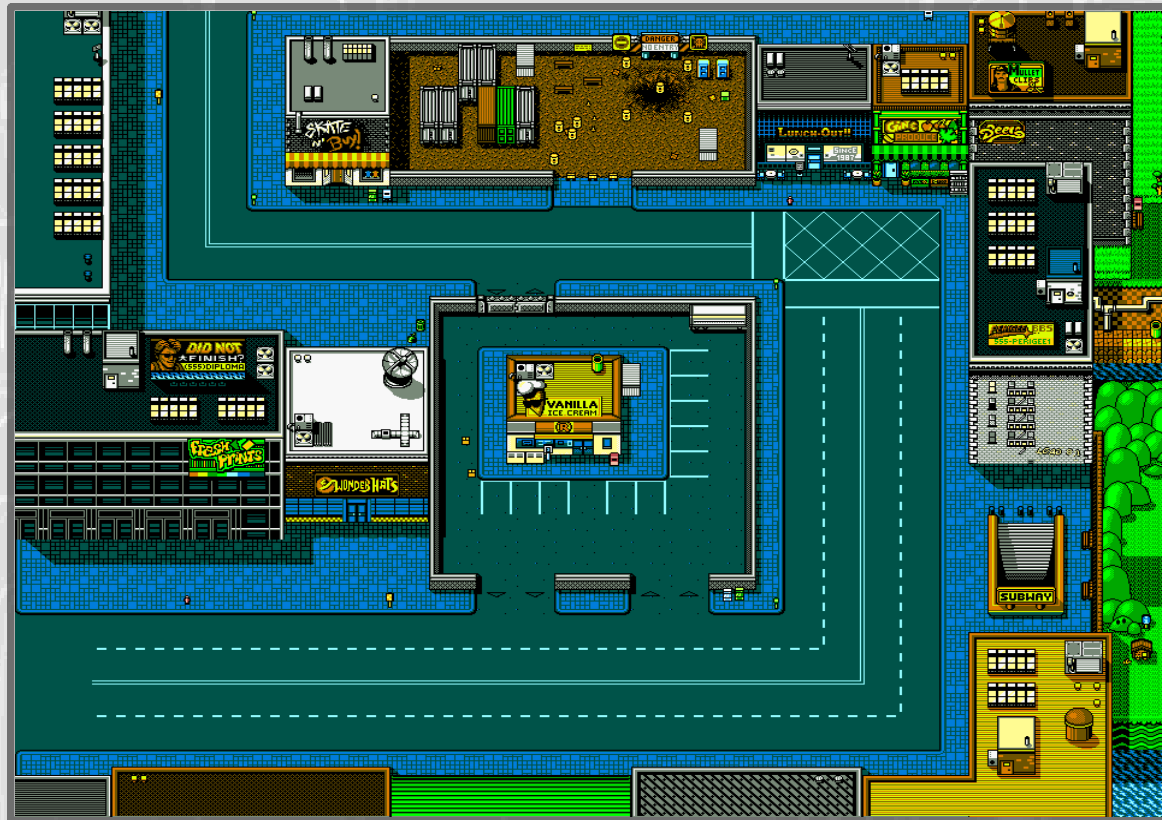
NEW! Download & Play Student Games!

Tag: The Power of Paint!

2009 Winner! INDEPENDENT GAMES FESTIVAL

Indie Games → Make your Own

- 2011 – *Retro City Rampage* – (Vblank Ent.)



RetroCityRampage.com

Questions ?

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