

JASON HISE

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GAME EXPERIENCE

DISSONANCE	The Guildhall at SMU	Source Ep2 Project	FALL 2008
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Software Developer, C++

- Designed and developed state based AI for the opposing team, using a four-tiered architecture. Activities, such as moving to a location or playing an animation, are used to accomplish actions, like attacking a specific unit or capturing a tower. Tactics perform a series of actions in order to accomplish a high level goal, such as capturing resources or defending an area. Finally, strategies are used to pick tactics based on the current game state. Critical conditions allow the current tactic to be interrupted if an important event occurs which must receive an immediate AI response.
- Developed new unit types using the Source NPC system, and implemented new schedules to provide better RTS behavior. This included the ability to automatically attack nearby units while staying within radius of a given defense point or while moving toward a location.
- Implemented hooks to allow designers to manipulate the AI, including the ability to turn off automatic unit attacks and to select the AI strategy. Communicated with designers frequently to ensure that I was providing hooks which would allow them the proper granularity of control.

EXTINCTION	The Guildhall at SMU	Unreal 2004 Project	SPRING 2008
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Software Developer, Unreal Script

- Developed custom weapons, including properly arcing arrows and spears.
- Collaborated with other programmers to solve network replication bugs.
- Worked with artists to establish standards for integrating assets, including setting requirements for naming conventions and model scale and orientation.
- Implemented game constraints and win condition, ensuring that players could only respawn if sufficient resources were available and that the game would end when no players of a given team could respawn.

PSIBORG	The Guildhall at SMU	2D Game Project	FALL 2007
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Software Developer, C++

- Developed a complete 2D engine without access to hardware accelerated graphics.
- Implemented a modular sprite animation system, supporting sprite states and animation anchor points which could be specified using an associated configuration file.
- Implemented physical simulation and collision detection/response with a diverse set of physical tiles, including concave curves and one-way floors.
- Implemented per-pixel normal mapping in software, and built a lighting engine on top of it.
- Developed complete game and game-play.

GAME TECHNOLOGY

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- Developed a 3D engine supporting agnostic access to D3D, OpenGL, and my own Software Rasterizer.
 - Implemented a multi-threaded task scheduler and thread-safe non-blocking FIFO. Discovered and solved the ABA problem under intense time constraints.
 - Created a simulation for exploring a 3D topology folded and embedded in a 4D environment.
 - Developed a compiler and virtual machine for the Cell Processor on the PS3, which supports parallelism by dispatching code tasks to separate cores as dependencies are met.
 - Implemented a textured cloth simulation using spring constraints and wind forces.
 - Implemented a Lunar Lander simulation in 3D using four physics-based rockets which consumed fuel mass while providing thrust.
 - Developed a terrain engine, with tile-based level of detail and T-Junction seam elimination.
 - Used shaders to implement tangent-space parallax mapping in both HLSL and GL assembly.
 - Created both BSP and Quad Tree scene graphs, using rendering optimization strategies including view frustum culling and potentially visible sets.
 - Implemented a streaming demo to load a model and animation as a single binary chunk.

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RELATED WORK EXPERIENCE

READY AT DAWN Irvine, CA 2009-Present
Software Developer for Secret Project, C++

BLUETRONIX Chagrin Falls, OH 2006-2007
AD HOC WIRELESS NETWORK VISUALIZER
Contract Software Developer, C#

- Provided 3D visualization of network traffic between ad-hoc wireless nodes.
- Designed interface between C-based hardware code and C# front end.
- Bound system together using C++/CLI as glue code.
- Used reflection to dynamically detect new input plug-in modules, allowing both hardware input and software simulation of network routing algorithms.

INNOVATIVE ORGANIZATIONAL SYSTEMS Chagrin Falls, OH 2004-2006
Software Developer, VB and C#

- Worked on database applications for managing electrical relays.
- Wrote tools to interface with relay hardware.

EDUCATION

THE GUILDHALL AT SMU Plano, TX 2007-2008
• Masters of Interactive Technology, Specialization in Software Development
• 3.9+ GPA

BOWLING GREEN STATE UNIVERSITY Bowling Green, OH 2005-2007
• Bachelors of Computer Science

AWARDS AND EXTRACURRICULAR ACTIVITIES

- President of local ACM chapter senior year of undergrad
- National Merit Scholar - Finalist and Scholarship Winner
- Developed final scene for Flatland: The Movie
- Developed 4D scene for documentary on the geometer Donald Coxeter
- Produced 4D animations for Wikipedia. Tesseract animation was selected as a featured picture, and was selected as the front page Picture of the Day for both November 9th, 2007 and December 10th, 2008.
- Helped teach AP Computer Science in 10th grade
- C++ and Math Tutor since 2003
- During the second term at the Guildhall I was given a full class day to teach a design technique I used in my graphics engine to our software class.

SKILLS

Languages: C++ (7 years), C (7 years), C# (5 years), C++/CLI (1 year), MEL Scripting, HTML+CSS
IDEs: Visual Studio, Dev C++
APIs: STL, Boost, Win32, Direct 3D, OpenGL, Fmod, Dot NET, 3DS Max
Design: Object Oriented Programming, Template Metaprogramming, Various Design Patterns
Algorithms: BSP+PVS and Quad Tree Scene Graphs, Shaders, Keyframe Bone Animation, Adaptive Level of Detail, Streaming, A* Path-finding, Four Dimensional Space Folding
Math: Linear Algebra, Quaternions, Splines, Numeric Integration
Artistic: Maya 8, Photoshop CS2, Origami