

John Hahn

Game Engineer

Phone: 806-570-4415

Email: john@hahnsolo.net

Portfolio: <http://www.hahnsolo.net>

Game Experience

LucasArts Internship (Unannounced AAA Title) May 2011 – July 2011

Intern Gameplay/AI Engineer (*Unreal Engine 3*)

- Implemented various gameplay and AI related features

Fury of the Ancients (Team of 15) October 2010 - Present

AI Programmer (*Unreal Development Kit*)

- Designed and implemented all AI for dungeon crawler RPG game including
 - Use of navigation mesh to find path and chase player
 - Finite State Machines for behaviors including:
 - Swarm around the player, teleport, suicide bombers
 - Set up mob animations
 - Created various Kismet nodes for the LDs to interact with the AI
 - Created data transparency so that the game designer can easily tweak and control the AI behaviors and balancing

Amaranth (Team of 7) July 2010 – October 2010

Sole Programmer (*Unreal Development Kit*)

- Designed and implemented all code for puzzle FPS game
 - Custom gun that shoots spheres that stick to whatever they hit
 - Spheres slow or speed up time for anything inside the sphere
 - Player maintains momentum after leaving a sphere
 - Turrets that track and shoot at the player
 - Drone robots that patrol the levels and shoot at the player on sight

Lollypop (Team of 4) March 2010 – June 2010

Sole Programmer (*TorqueX-2D C#*)

- Designed and implemented all code for a 2D top down physics based puzzle game
- Designed the mechanics and helped with the story
 - Custom "flick" slingshot mechanic for Xbox 360 Controller
 - Avatars bounce off the walls like rubber balls
 - Won "Most Original Mechanic" award (voted by peers)

Technology Experience

3D Rendering Engine: *HahnSolo Engine (HSE)* March 2010 – Present

- Renderer agnostic (OpenGL and Direct3D)
- Shaders (HLSL for Direct3D and GLSL for OpenGL)
 - Real-time lighting including specular, parallax, normal maps, height maps
- Custom scripting language (HSS) for engine configuration variables
- Quake 3 BSP map support with multi-texturing (light maps), ray-casting, and PVS culling
- Imports 3DS Max models using a custom file format called HMAX.
- Skeletal mesh animation and bone rendering
- Frustum culling, optimal model minimum bounding sphere calculations, and particle systems
- Artificial intelligence including A* path finding and GOAP planning.
- Particle system based real-time cloth physics

October 2010 – December 2010

John Hahn

Game Engineer

Phone: 806-570-4415

Email: john@hahnsolo.net

Portfolio: <http://www.hahnsolo.net>

Concurrent RTS Simulation

- Implemented thread-safe, lockless FIFO supporting multiple producers/consumers with underlying architecture as both a linked list and ring-buffer
- Efficient state management system across multiple threads

Squad-Based AI Simulation

October 2010 – December 2010

- Implemented finite state machine and fuzzy logic to simulate a tactical squad
- Modified Raven 2D level design tool to support cover points and cover walls
- Squad will follow the player and take orders from the player
- Squads can bunker down in a cover point location and work together to fight off enemies
- Squads behind cover walls take less damage if the enemy is on the other side of the wall

Custom Scripting Language: *HahnSolo Script (HSS)*

August 2010 – September 2010

- Implemented lexical analyzer, parser, compiler, and VM for a custom scripting language
- Variables are weakly typed
- Integrated with HSE and used for configuration variables in the engine
- Scripts can also manipulate 3D objects in HSE

Landscape with Level-of-Detail support

August 2010 – September 2010

- Implemented height-map based landscape rendering
- Dynamic LOD support with intrinsic detail and stitching to fill “holes” between the LOD chunks
- Dynamically calculate landscape normals and wrote shader in both GLSL and HLSL
- Quad-tree frustum culling

Related Experience

Software Engineer
CA, INC. (Plano, Texas)

June 2009 – December 2009

Software Developer
Financial Payments (Amarillo, Texas)

May 2005 – June 2009

Computer Technician
Best Buy Geek Squad (Amarillo, Texas)

2004 – 2005

Computer/Network Technician
Epin Technologies (Amarillo, Texas)

2003 – 2004

Education

The Guildhall at Southern Methodist University, 3.7 GPA
Master's in Interactive Technology, Specialization in Software Development

January 2010 – Present

West Texas A&M University, 3.5 GPA
Bachelor's of Science in Computer Science

2005 – 2008

- *National Honors Society, Alpha Chi Honors Society*
- *Vice-chair of the WTAMU Student Chapter of the Association for Computing Machinery, 2006 – 2008*

Skills

C/C++, C#, Java, Ruby, Rails, DirectX, OpenGL, UnrealScript, Debugging, Linux, XNA, MySQL, MSSQL, BSP, Quad-trees and Oct-trees, Real-time physics, Quaternion, Version Control (SVN), FMOD(Sound), Lighting, HTML, CSS, XML, SCRUM, Multi-threading, lockless FIFO, Adobe Photoshop, 3DS Max, Rigid body dynamics, Particle systems, Numerical integration, Linear algebra, Scene graphs, AI, GOAP, A*, Visual Studio, Eclipse, Microsoft Office 2007