

GAME EXPERIENCE

PrimaeNoctis, Unreal Tournament 3 project August 2008 – September 2009

Programmer, 17-person team (3 programmers)

- Implemented all custom components of game HUD
- Implemented skills of all three different forms of main character
- Implemented third-person and behind-shoulder camera and handled Xbox controllers
- Implemented custom AI for enemies so that they know how to use their weapons effectively

Elastiball, Unreal Tournament 3 project March 2009 - May 2009

Sole Programmer, 7-person team

- Create new weapon with swing mechanic: player shoot and stick a rope at any objects in the game's environment, swing around (player can control character in the air)
- Implement custom game HUD
- Work with artists and level designer in building the art packages and the game's installer
- Wrote technical design document

Return of the NOM, 2D project October 2008 – December 2008

Sole Programmer, 3-person team

- Programmed a 2D engine and game (scrolling platform, simulating forces, collision detection, alpha blending, fonts)
- Integrated FMOD for music and sound using an abstract sound manager

GAME TECHNOLOGY

Master's Project: In-game graphic user interface for AI programming August 2009 – January 2010

- Programmed an isometric 2D team-based action-RPG
- Implemented a data driven design: monsters, magics... can be added by changing the data files
- Coded a rule-based AI system, design a AI-rule definition file with real time loading
- Create GUIs to edit AI in game
- Created a HUD system to show the game's info

3D Rendering Engine October 2008 – July 2009

- Coded a general interface and general data structures that connect transparently to both OpenGL and Direct3D (to the depth of programming HLSL and GL assembly shaders for per-pixel light, bump, and parallax mapping)
- Developed and unit tested a math library (fixed point, 2D and 3D vectors, matrices, quaternions)
- Built a QUAKE map loader (BSP, lightmaps, textures, Bezier curve patches) which does fast ray traces with the BSP
- Coded an Importer and Exporter for 3DStudioMax files and a custom file format (includes models, textures). Optimal file loading with single read, compute perfect optimal bounding sphere of the model.
- Design a logging system with several outputs: screen, console or files

Terrain Rendering Engine

April 2009 – May 2009

- Created 4 algorithms for stitching patches so that there're no holes in the terrain
- Implemented quad-tree scene graph for culling terrain
- Implemented dynamic Level of Detail and intrinsic detail
- Implemented per-pixel light with bump map generated from the terrain's height map
- Created skybox around the terrain

Directed Focus Study: Procedural generated dungeon

March 2009 – May 2009

- Implemented graph layout drawing algorithms: Horizontal-Vertical drawing, recursive wind, force-directed
- Implemented a portal-based scene graph
- Coded several algorithms for generating random 2d shape
- Created 3D dungeon includes rooms, hallways full textured with lighting

Interpreted Scripting Language

March 2009 – May 2009

- Wrote a grammar for a C-like syntax (if..else, switch, while, do..while, for, foreach) with weakly-typed variables (vector, string, integer, float) which have basic operators between them
- Coded a lexical analyzer to create tokens from language use, a parser to build a tree from the token stream, and a compiler for converting the syntax tree to custom bytecode
- Programmed a stack-based virtual machine to operate on the bytecode (supporting function call, local variables and recursion)
- Integrate the scripting codes with game project's codes

EDUCATION**The Guildhall at SMU**

December 2009

- Master of Interactive Technology in Digital Game Development
- Specialization in Software Development
- Current Overall GPA: 3.588

Vietnam National University, Hanoi, College of Technology

December 2009

- Bachelor of Science in Computer Science
- Overall GPA: 8.64 out of 10

SKILLS

C/C++, C#, Java, Python, Unreal script, Lua, Java script, Assembly, DirectX 9, OpenGL 2.0, XNA, LuaBind, Win32, HLSL, GL Assembly, FMod (sound), TCP/IP, UDP, HTTP, lighting, BSP, portal system, scene graphs, debugging, object-oriented programming, design patterns, calculus, linear algebra, quaternion, numerical analysis, Newtonian dynamics, movement, collisions, numerical integration, cloth simulation, spring-mass-dampener systems, rigid body motion, particle systems, XML, HTML, Visual Studio 2008, Tortoise SVN, Microsoft Office (Word, Excel, PowerPoint), UnrealEngine 3, UnrealEd