

# ELIZABETH LABELLE

GAMEPLAY AND TOOLS PROGRAMMER

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## EDUCATION

**The Guildhall at Southern Methodist University** **May 2013**  
*Master of Interactive Technology: Software Development*

**Worcester Polytechnic Institute** **May 2011**  
*Bachelor of Science: Double Major in Computer Science & Interactive Media and Game Development*

## SKILLS

**Languages** C/C++, C#, Python, Java, UnrealScript, HTML/CSS  
**APIs** OpenGL, GLSL, DirectX, HLSL, Qt Framework, 3ds Max SDK, Maya Python API, FMOD  
**Game Engines** Unreal Development Kit (UDK), Unity, C4, Torque 2D  
**Software** Visual Studio, Tortoise SVN, Eclipse, MS Office, Maya 2012, ZBrush 4, Photoshop CS5

## TEAM GAME PROJECTS

<b>Voodudes</b> <b>Lead Programmer, 5 months, Team of 15</b> <i>UDK – 3D Action-Adventure Game</i> <ul style="list-style-type: none"><li>Managed team of 4 programmers</li><li>Implemented adjustable enemy encounter system</li><li>Created AI controls for five boss fights</li><li>Coordinated with artists and level designers to improve workflow and resolve problems</li></ul>	<b>Cyborg Ninjas on Fire</b> <b>Programmer, 3 months, Team of 7</b> <i>UDK – Multiplayer 4v4 Capture the Flag Game</i> <ul style="list-style-type: none"><li>Implemented all game weapons</li><li>Developed networked multiplayer gameplay</li><li>Added particle effects to weapons and players</li><li>Game shown at Guildhall Exhibition in May 2012</li></ul>
<b>Telesloth</b> <b>Sole Programmer, 2 months, Team of 3</b> <i>Torque 2D – 2D Fast-Paced Sidescroller</i> <ul style="list-style-type: none"><li>Developed code for all gameplay mechanics</li><li>Implemented adjustable random level generation</li><li>Implemented arcade mode and scoring system</li><li>Shown at Guildhall Exhibition in Dec 2011</li></ul>	<b>Genometry</b> <b>Team Lead, 4 months, Team of 7</b> <i>Virtual Environment developed at Osaka University, Japan</i> <ul style="list-style-type: none"><li>Created a multithreaded server in Java</li><li>Designed a networked message passing system</li><li>Created a networked environment renderer in ActionScript3</li></ul>

## PERSONAL GAME TECHNOLOGY PROJECTS

### Rendering

**CombustionEngine** Rendering engine for developing games in OpenGL and DirectX simultaneously  
**Voxel Terrain** Procedurally creates a voxel grid and uses Marching Cubes to generate a textured mesh  
**GPU Particle Sim** A 3D simulation of 1 million particles on the GPU using DirectX compute shaders

### Tools

**CombustScript** Scripting language compiler that tokenizes, parses, generates bytecode, and runs scripts  
**3ds Max Exporter** 3ds Max plugin for exporting models, materials, and animations to a custom file type

### AI

**GOAP Simulation** AI uses A\* pathfinding and Goal Oriented Action Planning to make rational decisions  
**Boids Simulation** Simulates wandering/flocking/chasing and predator/prey behavior

### General

**Memory Manager** Heap memory manager with reporting and debugging functionality

## WORK EXPERIENCE

**Virtual Sword Exhibit Developer, Higgins Armory Museum** **1 year, 2009 – 2010**

- Member of a student team that designed and implemented an Augmented Reality exhibit

**Community Service Assistant, Worcester Polytechnic Institute** **3.5 years, 2008–2011**

- Responsible for organizing, supervising, and publicizing community service events