Joe Lubertazzi

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Engine • Tools • Physics • Gameplay

Professional Experience

Respawn Entertainment • Software Engineer Intern **May 2015 – Aug. 2015**

- Implemented gameplay, engine, and tools features and fixed a wide array of bugs in proprietary multithreaded client-server C++ engine and Squirrel-based scripting language for next-generation console/PC multiplayer FPS
- Communicated and worked with fellow programmers, game designers, sound designers, artists, testers, and other teammates on a daily basis in iterative fashion to solve problems
- Adhered to department standards of code organization, testing and submission
- Participated in daily and weekly playtesting and feedback sessions

Blizzard Entertainment • Software Engineer Intern, Automation Infrastructure **May 2014 – Aug. 2014**

- Developed database and web service technologies for managing and reporting on automated test results across multiple games/products utilizing MSSQL, C#/Web API, Python and Tableau
- Communicated and worked with developers across multiple departments and games/products
- Participated in weekly and monthly sprint planning with team/department

Projects • DigiPen Institute of Technology

Constraint-Based 3D Physics Engine **Jan. 2015 – Apr. 2015**

- Implemented constraint-based physics engine utilizing Erin Catto's Sequential Impulses technique with support for friction and restitution
- Implemented OBB/Sphere collision primitives

Dischord • *3D third-person action game* **May. 2014 – Apr. 2015**

- Implemented custom reflection engine
- Implemented object and scene management systems
- Implemented in-game editor, including a scene, content, and particle editor
- Improved and developed content pipeline, including scripting systems and raw asset importing
- Developed gameplay systems, including character controller, tutorial, and wave-progression systems
- Maintained and debugged legacy physics engine
- Managed build systems and overall project structure
- Recipient of 3 DigiPen Student Game Awards
- Written in C++ with minimal use of third-party libraries

SubRay • *2D atmospheric exploration game* **Nov. 2013 – Apr. 2014**

- Improved and implemented engine features, including scene and resource management systems and custom reflection engine
- Implemented in-game editor, including a scene, geometry, path, and particle system editor
- Programmed gameplay systems, including player controller and associated ability systems
- Improved and managed build systems and overall project structure
- Recipient of 6 DigiPen Student Game Awards, including Game of the Year; winner of Intel Buzz Workshop Seattle Developer's Showcase; finalist in Strasbourg European Fantastic Film Festival Indie Game

Technical Skills

API Design
Engine Architecture
Component-Based Design
Data-Driven Design
C++ Type Reflection
Script-Embedding
Content Pipeline
Editor/Tools
Multithreaded Debugging
Impulse-Based Physics
Constraint-Based Physics
Rigid Body Physics
Gameplay Programming

Languages

C
C++
C#

Math/Physics Skills

2D/3D Linear Algebra
Geometry
Calculus
Kinematics
Motion Dynamics
Collision Detection

Contest; 3rd place for best visual quality at Intel University Games Showcase 2015

- Written in C++ with minimal use of third-party libraries

Mitosis • *2D multiplayer deathmatch game* **Dec. 2012 – Apr. 2013**

- Implemented 2D impulse-based rigid body physics engine and component-based core architecture
- Programmed gameplay and UI systems, including rope mechanic, particle systems, player abilities, main menu and pause menu systems
- Recipient of 2 DigiPen Student Game Awards
- Written in ANSI C with minimal use of third-party libraries

Leadership Experience

DigiPen MAT140 Supplemental Instructor **Sept. 2013 – Dec. 2013**

- Conducted weekly supplemental lectures and held office hours for roughly 120 students
- Corresponded with course instructor and co-SI to plan and organize lecture material

DigiPen Student Ambassador **Jan. 2013 – Present**

- Regularly attend prospective student info sessions and host student shadows
- Hosted incoming freshmen as an orientation leader for the Fall 2013/2014 academic years

Education

DigiPen Institute of Technology • Redmond, WA **Sept. 2012 – Dec. 2015 (Expected)**

Bachelor of Science in Computer Science in Real-Time Interactive Simulation, **3.87 GPA**