

Reuben Friesen

Game Programmer

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Skills

Languages

- C/C++
- Java
- Unrealscript
- C#
- HLSL
- GLSL

Software / API

- Unreal Development Kit (UDK)
- Torque
- Visual Studio
- Eclipse
- DirectX
- OpenGL
- TortoiseSVN
- 3ds Max Exporter API
- Android

Competencies

- Artificial Intelligence
- Skeletal Animation
- Collision Detection/Response
- Numerical Integration
- Computational Shaders
- Byte-code Compilers
- Networking
- Concurrency
- Procedural Terrain

Team Game Experience

Blastrobots

Arcade-style top-down action game built in UDK

Programmer (5 Months, 14 Developers)

- Created flexible artificial intelligence system supporting seven different enemy types with distinct behaviors as well as multiple boss-type enemies
- Collaborated across disciplines to build scripting tools for level designers in Kismet
- Constructed critical gameplay systems including unique death/revive system

Food Feud

First-person multiplayer capture-the-flag game built in UDK

Technical Lead (4 Months, 7 Developers)

- Created technical implementation schedule and coordinated tasks
- Managed game state over client/server network architecture
- Expanded artificial intelligence systems to understand custom capture-and-defend flag system and intelligently use custom weapons and abilities.

Sludged

Side-scrolling action game built in Torque2D

Technical Lead (2 Months, 3 Developers)

- Implemented gameplay systems including character hover and particle spray weapon
- Built dynamic animation system to blend player aim with character movement

Treads of Glory

Top-down shared-screen multiplayer combat game built in C++

Programmer (2 Months, 3 Developers)

- Designed and constructed custom physics engine supporting collision detection and collision response for hundreds of actors in real time

Projects

Master's Thesis

Adaptation of Box2D to Non-Euclidean Spaces

- Supports space where portals alter position, rotation, size and mirroring of rigid bodies
- Bodies can span an arbitrary number of portals simultaneously in parallel or series
- Simulation and visualization maintain consistent sixty frames-per-second
- Objects come to rest stably even when stacked and under a constant force such as gravity

Solar Nebula Simulation

Massive physics simulation on GPU

- Wrote computational shader program to process rigid body movement and collision
- Created thread-safe spacial bucketing algorithm
- Supported 65,536 simulated bodies in real-time

Net-Tofu

Real-time server/client network game

- Developed server to run on both Windows and Linux
- Built guaranteed messages, throttling, dead-reckoning and timeout functionality over UDP using Winsock(Windows) and Socket(Linux) APIs
- Supports five or more players in conditions of high latency and frequently dropped packets

Additional Experience

Computer Remedies, Morden, Manitoba

May 2011 – August 2011

Computer Technician/Sales Associate

- Repaired computer hardware and software
- Sold and configured cellphone and home phone services

A2Z Development, Lake Forest, CA

March 2011 – April 2011

Quality Assurance Tester

- Discovered and documented defects in Google Android software integration
- Mentored team members

Education

The Guildhall at Southern Methodist University *Dallas, Texas*

Expected to graduate May 2013

Master of Interactive Technology, specialization in Software Development

Canadian Mennonite University

Winnipeg, Manitoba

Graduated August 2007

Bachelor of Arts, major in Computer Science