Bullet 2.81 Physics SDK Manual

Erwin Coumans

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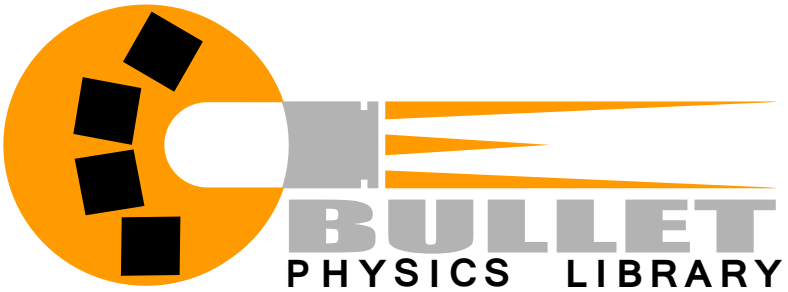

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Chapter 1

Introduction to Bullet

Bullet Physics is a professional open source collision detection, rigid body and soft body dynamics library. The library is free for commercial use under the zlib license.

1.1 Main Features

- Open source C++ code under zlib license and free for any commercial use on all platforms including PLAYSTATION 3, XBox 360, Wii, PC, Linux, Mac OSX, Android and iPhone
- Discrete and continuous collision detection including ray and convex sweep test. Collision shapes include concave and convex meshes and all basic primitives
- Fast and stable rigid body dynamics constraint solver, vehicle dynamics, character controller and slider, hinge, generic 6DOF and cone twist constraint for ragdolls
- Soft Body dynamics for cloth, rope and deformable volumes with two-way interaction with rigid bodies, including constraint support
- Maya Dynamica plugin, Blender integration, COLLADA physics import/export support

1.2 Contact and Support

- Public forum for support and feedback is available at `http://bulletphysics.org`
- PLAYSTATION 3 licensed developers can download an optimized version for Cell SPU through Sony PS3 Devnet.

1.3 What's new

1.3.1 New in Bullet 2.81

- SIMD and Neon optimizations for iOS and Mac OSX, thanks to a contribution from Apple
- Rolling Friction using a constraint, thanks to Erin Catto for the idea.
  See `Demos/RollingFrictionDemo/RollingFrictionDemo.cpp`
- XML serialization
  See `Bullet/Demos/BulletXmlImportDemo` and `Bullet/Demos/SerializeDemo`
- Gear constraint
  See `Bullet/Demos/ConstraintDemo`.
- Improved continuous collision response, feeding speculative contacts to the constraint solver. See `Bullet/Demos/CcdPhysicsDemo`

- Improved premake4 build system including support for Mac OSX, Linux and iOS
- Refactoring of collision detection pipeline using stack allocation instead of modifying the collision object. This will allow better future multithreading optimizations.

1.4 Building the Bullet SDK and demos

Windows developers can download the zipped sources of Bullet from http://bullet.googlecode.com. Mac OS X, Linux and other developers should download the gzipped tar archive.

1.4.1 Using premake with Visual Studio

After unzipping the source code, you can open the `Bullet/build` directory and double click on `vs2010.bat` to generate Visual Studio 2010 project files and solution. Just open `Bullet/build/vs2010/0BulletSolution.sln`

1.4.2 Using premake with Xcode for Mac OSX or iOS

1.4.3 Using cmake

1.4.4 Using autotools

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