A:M FORUMS

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Cloth Controls Objects:, Using simulated cloth to animate the shape of an object with bones.

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entity   Post #1

Today, 08:12 AM

sciBORG
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Group: Hash Fellow
Posts: 781
Joined: 9-November 03
From: Vineland, New Jersey
Member No.: 979
Contests Won:*

This topic is also posted here:

http://www.hash.com/forums/index.php?s=&am...st&p=243770

Basicly, this technique is a way to have cloth deform a bulky object, just like it does with a button except using a bunch of bones instead of one.

Since cloth is made up of a flat mesh, you can add objects to the surface via path constraint to the cloth's splines, to allow the objects to stay with the cloth... well! This is done with constraints/bones, so why couldn't you do it also with bones in an object like a rope or a backpack *(Woot)*.

:: You can create a cloth grid and set up as you would normal cloth on a character. Don't forget to make a deflector object for the cloth to react to.

:: Create some bones at each of the cp's of the cloth. Now you have a grid of bones *(don't parent them... keep them all seperate)*.

:: Create a pose (ON/OFF) and start constraining those bones to the splines *(path constraint)*. You will have to use "ease" to get the bones into the exact position on the spline, because the bones will attach to the spline at "0% ease" which is the begining of the spline. If you want to use 0% ease you must enter "0" into the "ease" field to create a keyframe in the pose, otherwise A:M will animate the ease automaticly in the chor from 0 to 100% over the span of time in the chor.

:: Now, you need to keep these bones handels pointing to the bone above in the grid, so use "aim roll at" to do that. Now, you got all these bones attached to the cloth when you turn on the pose in an action... wait... theres more!

:: You can create or import that belt or chain or backpack and rig it like your cloth grid *(these bones need to be controlling the bulk object... only use the amount of bones you really need to make it work: the bones nearest the cloth will be the main bones. You can make other bones that are parented with these bones to control other parts of the object you made or imported.)*
This object will not be a deflector... it is not cloth either so it doesn't need a

simcloth material on it.

:: Make a new pose **(ON/OFF).** This pose will constrain your object bones to the closest cloth bones using "translate to" and "orient like".

MAKE SURE CORRESPONDING BONES ARE ORIENTED AND IN THE SAME POSITION!

That is a basic rigging rule... even if your not "orienting like", it's always a good idea to do it so your rig looks clean *(it doesn't have to be perfect, just neat).*
... Now you have all these object bones in the exact position and orientation of the cloth bones.

:: Hide *(H)* your object and simulate your cloth. This is just a test... doesn't need to be perfect or long lasting!

:: Un-hide your object and make sure your two poses are **ON**. Make the cloth *transparent 100%*, so it doesn't show, unless you want it to show.
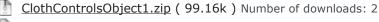
Scrub through... Look at it!
There is an object distorting and bouncing around your character, something that can't be done as well with dynamic bones. If your object is sinking into your character... try setting your collision radius larger to keep the object from penetrating your character too much.

Hope you can understand this... I have a sample animation and project *(There are some animations of the strap and chain examples here below, and two of the objects projects (Rope and Chain projects).)*

I tried a rope object and a strap object and a chain object *(the chain was created by Mike Muncy and is available on the A:M extras DVD)*

Attached File(s)

FakeStrapDynamics_finalvback.mov (1.39mb) Number of downloads: 21
ClothControlsObject1.zip (99.16k) Number of downloads: 2
FakeRopeDynamics_finalvback.mov (1.17mb) Number of downloads: 16
FakeChainDynamics_finalVback.mov (1.54mb) Number of downloads: 17
ClothControlsObject2.zip (144.55k) Number of downloads: 2

John Bigboote

Roll-over avatar for options!
▪▪▪▪▪▪▪▪▪

Group: Contributor
Posts: 1,424
Joined: 22-May 04
From: Michigan
Member No.: 3,042

☐ Today, 09:04 AM

Entity-

Nice work! I'm pickin' up what you are putting down, man!

I had breezed thru that other thread where they discovered how to place a button on cloth, a quick read of yours and now I understand the technique fully! THIS is smart thinking.

If you raise the mass of your cloth OR increase the gravity force of the choreography you will get less jumping around...

GOOD BRAINSTORMING!

Myself...I have been 'toying' with the idea of using thin cloth strips as HAIR for a while now, might have to give it a whirl...

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http://www.campbellanimation.com

And join the 'Hash FRAPPER' (It's Free...all the kids are doing it!)
http://www.frappr.com/hashfrapper

⬆ TOP   ➕ QUOTE   🔗 REPLY

Paul Forwood

Master
▪▪▪▪▪▪▪▪▪

Group: Hash Fellow
Posts: 3,222
Joined: 19-September 03
From: London
Member No.: 183

☐ Today, 10:44 AM

Interesting! That chain looks amazing except that it passes through itself. Did you have self collision detection turned on?

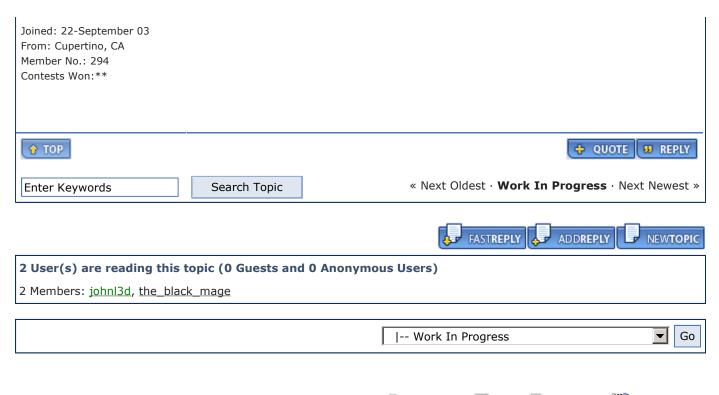Nice work, Rich! 🙂

⬆ TOP   ➕ QUOTE   🔗 REPLY

NancyGormezano

Runs With Scissors
▪▪▪▪▪▪▪▪▪

Group: Hash Fellow
Posts: 2,477

☐ Today, 11:55 AM

very very interesting - nice thinking (I have got to play with cloth one of these days)

Wasabi Woman Wonder (a lot...)
http://www.intercad-inc.com/nancy

Joined: 22-September 03
From: Cupertino, CA
Member No.: 294
Contests Won:**

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2 Members: johnl3d, the_black_mage

|-- Work In Progress | Go

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