Sri Lanka Institute of Information Technology

Project Topic Assessment – 2016

Research Problem:

Modern video games have become increasingly detailed and expansive. These games utilize complicated and intricate 3D meshes to simulate reality.

Making immersive games isn't an easy task though, and game engines don't provide features for soft body physics. Soft body physics involves dynamic changes in meshes in response to an object's environment. These changes can include squashing, stretching and plastic deformation.

Existing solutions for implementing soft body physics are expensive and/or are closed source.

One major reason this area hasn't been pursued heavily is the incredibly high computational power that handling dynamic meshes, requires. This hurdle has become less of a problem now that processing capability has caught up.

Research Area:

Computational geometry

Simple soft body physics

Solution proposed:

A video game plugin that developers will easily be able to add to their game that converts their static objects to dynamic ones, responding to external forces and change accordingly.

This module will be customizable (for the developer, thereby allowing them to expose the customisations to the end-user) so they can decide the physical properties of the objects like elasticity.

The component will be distributed via the game engine's marketplace/asset store.

Technologies to be used:

Unreal engine / Unity game engine

C++ / C#

Team Members:

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Acceptable: YES/NO

Changes proposed:

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Any other Comments:

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Approved by Project Coordinator:

Signature: _____