CS Masters' Thesis Defense

Title: *NeevEngine: Using XNA Game Studio for Serious Game Design and Development*

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Abstract:

This paper describes a modular framework for development and rapid prototyping of serious games using XNA framework for Xbox 360 game programing. NeevEngine, a game engine was designed and developed on top of XNA Game Studio using Visual Studio 2008 Express. NeevEngine consists of an internal Graphics Engine, UI framework, Input framework and Quiz Api which form the core components of the engine. The modular design of the engine provides extensible possibilities for further enhancements.

NeevEngine was used for development of MatsISLE, simulation of a Materials Science Laboratory in a Mechanical Engineering course for undergraduate students at SDSU, where the player goes through the steps involved in Tensile Testing Experiment. The game engine provides support for 3D room rendering, animations, presentation of educational content and presentation of quizzes. All the quiz data is stored in a MySql database with the help of PHP webservices that can be later retrieved. This allows the game writer and content developers to modify and include new content material to further enhance the educational value of the game.

Results show that XNA can be a viable platform for creation and development of educational games, minimizing core development work needed to manage art/sound assets and development of basic techniques for 3D game programming. With the help of NeevEngine this process is further streamlined and enhanced thereby enabling the development team to focus on content generation and presentation.