SAN DIEGO STATE UNIVERSITY
Leadership Starts Here

SDSU
presents
a thesis defense for
Master of Science
degree in
Computer Science

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4:00pm
GMCS 418

RISHU MISHRA

Serious Game Design and Evolution of MatsISLE Gaming Project

Abstract

At many universities, as in San Diego State University, the introductory Materials Science course is an integral part of the engineering curriculum that serves the learning needs of students with various majors including civil, mechanical, construction, electrical and aerospace engineering. Because of the cost and required supervision it was difficult for the students of all majors to attend the material science laboratory and develop critical thinking and analytical reasoning skills; therefore it was required to have a means to make it possible for the students from majors other than mechanical engineering to be able to learn the concepts of materials science by performing the laboratory experiments along with taking the Materials Science lecture course. My research is about the evolution of MatsISLE: Material Science Interactive Simulated Laboratory Experience which is a 3D game developed using Microsoft XNA Game Studio 3.1 and Microsoft Visual Studio 2008 Express that bridges the learning gap and provides the opportunity for the students of non-Mechanical majors to master the concepts of material science by a practice-based learning.

In my research I will discuss serious games and their educational effectiveness. As the part of my research I have taken the initiative of updating the MatsISLE game by inspecting the code components of the game and adding new features to it. This thesis also describes the process of distributing the MatsISLE game as a freeware on MERLOT, which is an open source website that serves as repository of free online resources.

Thesis Committee

Kris Stewart, Thesis Chair, Department of Computer Science
Carl Eckberg, Department of Computer Science
Khaled Morsi, Department of Mechanical Engineering