**THE CONCORDIA INSTITUTE FOR INFORMATION SYSTEMS ENGINEERING
IS PLEASED TO PRESENT THE FOLLOWING GUEST LECTURE IN
OUR CIISE SEMINAR SERIES**

Mr. Khaled Tarmissi, Ph.D. Student
Concordia Institute for Information Systems Engineering

Geometric Mesh Denoising Via Multivariate Kernel Diffusion

Recent advances in visual information systems have increased the use of 3D models in many multimedia applications including art and entertainment, virtual reality, and computer games. With the increasing use of 3D scanning and acquisition technology, there is a rising need for robust 3D object denoising techniques to remove inevitable noise in the measurements. Even with high-fidelity laser scanning devices, the acquired 3D mesh models are usually contaminated by high-frequency noise in the position of vertices, and therefore a reliable mesh denoising technique is often required. Motivated by the concept of multivariate kernel density estimation as an important data analytic tool which provides a very effective way of showing the geometric structure of the data, a 3D mesh denoising method is presented in this talk. The main idea behind the proposed approach is to use a regularized bandwidth matrix of the kernel density in order to not only remove undesirable noise but also reduce the over-smoothing effect while preserving prominent geometric features of a 3D mesh such as curved surface regions, sharp edges, and fine details. The experimental results demonstrate the effectiveness of the proposed algorithm in comparison to existing 3D mesh denoising techniques.

Biography: Mr. Khaled Tarmissi is a PhD student in the Department of Electrical and Computer Engineering. His research interests include topological modeling of 3D graphics and mesh denoising.

Thursday, March 26, 2009

16:00 – 17:00
EV003.309

Refreshments will be served
(1515 St. Catherine Street West)