

3D Facial Image Analysis for Medical Diagnosis

Date/Time: Thursday, November 1, 2007, Noon-1:00pm
Place: SL 165 (723 West Michigan Street)
Speaker: Dr. Shiafan Fang
Associate Professor of Computer and Information Science, IUPUI

Abstract:

I will present a new 3D medical image analysis technique for polygon mesh surfaces of human faces for a medical diagnosis application. The goal is to explore the natural patterns and 3D facial features to provide diagnostic information for Fetal Alcohol Syndrome (FAS) and Fetal Alcohol Spectrum Disorder (FASD). Our approach is based on a digital geometry analysis framework that applies machine learning and pattern recognition techniques to polygon mesh surface data from 3D laser scanners and other sources. Novel 3D geometric features are identified, extracted and analyzed to determine the most discriminatory features which can be used for automated diagnosis of FAS and FASD. As part of the NIH International Consortium for FASD (CIFASD), the techniques developed here are being applied and tested on real patient datasets collected by CIFASD both within and outside the US. This is a collaborative work with several biomedical researchers from IU Medical Center, as well as the members of CIFASD.

Short bio:

Dr. Shiaofen Fang is an Associate Professor of Computer Science at Indiana University Purdue University Indianapolis (IUPUI). He received his Ph.D in Computer Science from the University of Utah in 1992. Dr. Fang is currently serving as the director of the IUPUI Signature Center for Bio-Computing, and the chair of the Department of Computer and Information Science. Dr. Fang's research interests are primarily in Visualization, Medical Imaging, and Computer Graphics. He has published extensively in these areas, and his research has been funded by the National Science Foundation (NSF), Nation Institutes of Health (NIH) and the National Institute of Justice (NIJ).

***** **Refreshments will be served at 11:30am** *****