CMSC 828V – Recent Advances in Graphics and Visualization
Fall 2009

Lectures: Tuesdays and Thursdays 12:30pm – 1:45pm CSIC 2120
Course Page: http://www.cs.umd.edu/class/fall2009/cmsc828v/
Professor: Amitabh Varshney, 4407 AVW, (301)405-6761, varshney@cs.umd.edu.
Office hours: Tuesdays and Thursdays 2:00 – 3:00pm, or by appointment. For an appointment, just drop by my office, or call me, or send me an email and we can fix up a time.
Texts: There is no textbook for this course; just read papers that will be posted on the class webpage
Prerequisites: CMSC 427, 740, or equivalent
Grading: Presentations: 20%, Midterm: 20%, Project: 30%, Final Exam: 30%
Final Exam: Final Exam will be 1:30pm – 3:30pm on Friday, December 18, 2009.
Academic Conduct: I expect high standards of professional conduct and ethics. All work that you submit in this course must be your own or approved in advance by the instructor.

Tentative Course Plan

Sep 1    Overview of the Graphics Pipeline and the Course
Sep 3    Tiled displays
Sep 8 and 10    Graphics and Multicore Architectures
Sep 15 and 17    GPU and Multicore Programming – History and General Principles
Sep 22 and 24    Parallel Programming and Memory Hierarchies
Sep 22    First Project Report Due
Sep 29 and Oct 1    General-Purpose GPU programming – CUDA
Oct 6 and 8    Multiresolution Meshes
Oct 13    Midterm
Oct 15    Classical Examples of Graphics and Visualization
Oct 20 and 22    Basis Functions for Graphics
Oct 27 and 29    Spectral Graphs and Meshes
Nov 3 and 5    Spectral Geometry and Harmonics
Nov 10 and 12    Visual Salience and Perception
Nov 17 and 19    Symmetry and Self-Similarity
Nov 24 and Dec 1    Digital Displays
Dec 3    Visualizing Time-Varying Data
Dec 8    Project Presentations and Final Project Report
Dec 10    Course Wrap-up
Dec 18    Final Exam, Friday, 1:30pm-3:30pm