

CS6604: Reinventing CS Education through the eTextbook

Spring, 2012

Class: CRN 12103/18858/19051: MW 2:30pm–3:45pm in Hutcheson 207

Instructor: Dr. C.A. Shaffer, Torgersen 2000A, 540-231-4354
Office Hours: See the web site
E-Mail: shaffer@cs.vt.edu

Course Website: <http://people.cs.vt.edu/~shaffer/CS6604>

Piazza Forum Page: <http://piazza.com/class#spring2012/cs6604>

Course Description:

The goal for the electronic textbook is to change how education is done. This will not happen simply by migrating static textbooks online, but rather by harnessing the full potential of the computer to create totally new artifacts that combine content and multimedia (the prior limits of the traditional "eBook") with simulation, automated assessment, and personalized tutoring.

This course will cover a broad range of topics that can support the eTextbook of the future, especially as they relate to CS education. Topics include:

- History of the use of electronic textbooks
- Existing research on their pedagogical effectiveness;
- The use of simulation in education
- The state of the art in algorithm visualization
- Online assessment: Question banks and automated assessment
- Intelligent tutors

This will be a seminar-style course based largely on reading and discussing research papers. A significant semester project will be developed by students, either individually or in teams. Publishable papers related to the projects are possible and will be encouraged.

Assignments and Grading Policy:

Since this will be a seminar-style course, grading is based largely on a semester project, student presentations of research papers in class, and student participation in class discussion. Tentative plan for work distribution is:

- Semester project: 45%
- Peer evaluations of projects: 5%
- Class/forum participation and attendance: 15%
- Class presentation: 15%
- Paper: 20%

Electronic Information:

Information such as copies of the syllabus and assignments, assignment solutions, and class grades, will be made available through the class web site. The course website is the official source for all course notifications. Out-of-class communication will take place at the course Piazza page.

Honor Code:

The Honor Code (and in particular, the Computer Science Departmental Honor Code) applies to this course and will be strictly enforced.