Joint HCI/SE Area Qualifying Exam (HCI Written Portion)
Fall Semester 2009
Thursday October 22, 9am-5pm.

Answer TWO questions as follows: Answer any ONE of the two questions from Section A (HCI Process and Theory). From Section B (Special Topics in HCI), answer ONE question from of your declared area of specialization.

Each of the four questions you answer will be given equal weight.

You will be assigned an identifying number and are required to hand in printed or written copies of your answers with each page identified only by that number. This enables us to grade your answers anonymously. You should NOT identify yourself explicitly by name on your answer sheets or implicitly by referring in the first person to your work (my project on ABC).

Please answer each question starting on a new page, with your answer following the text of the question. To avoid having to type the questions yourself, electronic copies of the questions will be available after 9am from a URL that you should already have been given. You may copy the questions from there.

Place any relevant references that you cite in an answer at the end of that answer, NOT in a separate section at the end of the whole exam.

If you have any questions or feel it necessary to make any assumptions in your answers, do not seek clarification from faculty or staff. Simply record your assumptions as part of your answer.
Section A: HCI Process and Theory – answer any ONE question.

Question 1

Consider Grudin’s classic challenges paper for adoption and evaluation of groupware. In it, there is an assessment from 1990 that groupware would never attain adoption at its "current" trajectory. Now consider some of the major successful groupware systems, for example instant messaging and Wikis.

a. Are these successful counterexamples to Grudin’s argument?
b. Which of Grudin’s challenges can be used to justify why these are successful groupware systems?

Question 2

You have just taken a new job at a large software company, and have been given the assignment of adding visualizations to the IDE they use. You ask your manager “What should the visualizations visualize?” He replies “Whatever you believe will provide the largest improvement in programmer productivity, from the time of initial coding through complete testing and product ship. You have a two months to decide.”

a. How will you go about deciding what to do?
b. What evaluatin methods will you use during the two months to come to a conclusion? Describe them. Justify your choice of methods.
c. Discuss two evaluation methods that you decided NOT to use in this two-month period, and explain why not.
d. Select one specific visualization technique for some software engineering activity that has been explored in the research literature but might not yet be included in an existing IDE. What kind of study would you perform to prove to your manager in a year’s time that the technique improved programmer productivity.
Section B: Special Topics in HCI

Information Visualization – answer any ONE question.

Question 3

a. Why is the evaluation of InfoVis techniques/systems so difficult? Use specific examples from the literature to demonstrate your points.
b. What evaluation approaches do you feel will be most fruitful in the future and why? Again, use specific examples from the literature or your own research to justify your answer.

Question 4

Describe the evolution of space-filling visualization techniques for presenting hierarchies. Include in your description the motivation or purpose that drove each new development.