SWEN 444 Human Centered Requirements and Design

Research Paper

Research Experience (100 pts) -- Done as a **PAIR**

The objective is see what industry and academia is doing to push the HCI envelope. Pick a topic, and research online and in the library to discover what innovations are underway for the user experience in terms of new hardware and software technology, and techniques for user interaction with new technology.

Each pair must have a unique topic **approved by the instructor**. The topic should be current (within the last 3 years). Marketing material does not count nor can the topic be a specific product or language/platform. There are great resources online from industry and from academia (research groups/labs). There are also lots of conferences such as ACM SIGCHI, ASSETS, CSCW to name a few. There are also journals from ACM that can be of value such as TOCHI, TiiS, and TACCESS. The sources must primarily be scholarly sources - wikipedia and similar sources won't count as sources though they can help you find sources.

For each pair, submit a 8 to 10 page paper (quality over quantity) discussing the selected topic/research area, the HCI implications for users in using the new technology, and your assessment of the rate and timing of mainstream adaptation of the new technology into products including barriers to adaptation. What is your personal opinion, will you use it?   Be sure to include a list of **at least ten references** that you used for your topic. Use either the **ACM or APA research paper template**.

Research Paper Milestones

1- Research paper idea (proposal):
   Examples:
      Team Project-related, **or**
      Survey of a state of the art HCI topic (e.g. ML in UI, AR, Accessibility), **or**
      Propose a solution for a usability problem in a current system
   Submission: Two paragraphs about the topic of the paper. Add *references (at least 3)*.

2- Research paper midway (beta):
   Submission: Introduction, literature review, and *references (at least 6)*
   In the intro, describe in more details the topic of your paper, the premise, and state your hypotheses. Write about the problem you are trying to solve, and why do you think it is important (motivation).
   In the lit review section, write a short paragraph about every paper you reviewed and how it impacted the field. At the end of the lit review section, write a summary for what you learned from all these papers.

Lit review resources:
dl.acm.org
scholar.google.com
Hint: use http://library.rit.edu/ to get free access to the research papers

3- Research paper complete (1.0):
Submission:

If you are writing a *survey paper*, the submission must include these sections: 1) Intro, 2) Lit review, 3) Systems comparison with respect to requirements, design and testing, 4) Discussion, 5) Conclusions, and 6) Refs (at least 10). Your main contribution will be a full comparison between all the systems you reviewed in the lit review section. The comparison should cover at least the systems' interaction design, and usability testing results.

If you are writing about *your team project, or a proposed system*, the submission must include these sections: Intro, lit review, system description, design, testing methodology, testing results, discussion, conclusion, and refs (at least 10). In the discussion section: reflect on the testing results and how they are related to the design. Highlight any surprising findings and explain the implications of the results.

Grade rubric:

- Research proposal: 10 pts
- Beta (intro, lit review): 40 pts
- Paper 1.0 (system/survey, discussion, conclusion): 50 pts
- For all deliverables, make sure to have the following criteria:
    1. Good technical writing (e.g. grammar, spelling, style)
    2. Use of either the ACM or APA research paper template
    3. Legibility: lack of it will be a penalty, as it is important
    4. Scholar references