Designing Creative Technologies Final Project

Objective: Use the principles and approaches discussed in this course to explore a future research domain in creative technology or creative production, or to inform the development of a new or in-progress creative technology. The final project will take the form of a 5-8 page paper (not including references). You should include figures and images as appropriate. You may opt to collaborate on this project or work individually. Students will also be responsible for providing feedback on in-progress outlines for fellow students.

Select between one of the following directions.

1. **Understanding Existing Practice:** Perform a preliminary study of the creative practice of a target domain. This could be an established domain, or an emerging one (machine learning driven video editing). Your study could involve interviews, observation, paper prototyping, or other methods. Describe the ways that practitioners leverage existing tools and the defining forms of expression that are relevant to this domain.
   Your preliminary study should include the following elements:
   a. An initial description of the target domain and the people who comprise it. You should also justify why the domain is worth studying with respect to the broader HCI, Creativity Support, or other technological research communities
   b. One or more research questions or lines of inquiry for your study.
   c. A written description of your data-collection methodology (interviews, observation, technology probes, written surveys, etc.) and approach to analysis (case studies, grounded theory, quantitative analysis).
   d. A summary of related research that examines related (or the same) domain as your project.
   e. A description of the results of your study and identifies prominent themes and preliminary findings
   f. A discussion describing the implications of your findings. This could include a revision of your original description of the domain, insight into the defining

practices, challenges, values, etc. of the individuals who comprise it, and/ or design implications for technological tools to support practice within this domain.

Connections to graduate research:
   a. Opportunity to refine formative study skills/ approaches.
   b. Opportunity to investigate a domain of practice you wish to explore more deeply in future research.
   c. Opportunity to extend/ continue the work in assignments 1-2.

2. **Analyzing Existing Technologies:** Perform a critical analysis of a field of established creative technologies. Provide evidence for the limitations and opportunities of these technologies and propose concrete directions for future development of alternatives.
   Your analysis should include the following elements:
   a. A description of the domain of technologies/ tools that you have chosen to focus on.
   b. A description of a minimum of 5 exemplar technologies drawn from HCI/ systems research publications or prominent examples used in real-world practice. Note: these can include technologies discussed in class.
   c. An exploration of the affordances and qualities of these example technologies that connects their features and constraints to the kinds of things that can be made with them and / or the people who can use them. You may choose to use charts or visualizations to map out this space.
   d. A following section that advocates for a new tool or technology that targets a space that has not been explored by the existing tools in your analysis. Note: The new technology you propose in the essay need not be a technology you're working on (though it could be). Think of this as an exercise in identifying opportunities and articulating the differences between systems, not in describing what you're actually building.

Connections to graduate research:
   a. Opportunity to plan for the literature review for your qualifying exam.
   b. Opportunity to develop expertise in a new research domain.
   c. Opportunity to build out the related work section of a paper you're writing or planning on writing.

Example: Contextual essay comparing programming languages and art and craft media
http://creativetech.mat.ucsb.edu/readings/contextual_essays_example.pdf

3. **Informing the design of a new or in-progress technology:** Develop a formal evaluation proposal for tool or technology of your own design (or one that you are planning to design).
   Your proposal should include the following elements:
   a. Description of the target audience- i.e. who are your subjects? What qualities define them?
   b. Description of study objectives– i.e. what are you trying to learn? What are the research questions or hypotheses you seek to explore/test?
   c. Description of study measures– i.e. How will you collect data during the study? How do these forms of data relate to your objectives?
   d. Description of study tasks/ structure– i.e. What will participants do?
   e. Analysis of potential risks/ benefits for participants in your study.
   f. Description of the anticipated outcomes of the study.
   g. Description and analysis of a pilot run (1 participant) of your proposed structure. Note: you do not have to pilot your entire study or run it with a fully functional technology. We can discuss approaches to piloting based on the status of the technology you are developing the evaluation for.
   h. Analysis of the limitations of your proposed study- what data will you fail to capture?
   Connections to graduate research:
   a. Useful for guiding implementation (knowing what to build and what not to build)
   b. Useful when planning a proposal for IRB approval of human-subjects research.
   c. Helpful for planning for the evaluation section of a research paper.

Rough Examples— note: these are outlines. Your final paper should be more complete than these examples.

Workshop Outline for Para Research: https://drive.google.com/drive/folders/15zu3ULeXJCKjBGKBgp0mxCxMqJwBPpjC?usp=sharing

Outline for Artist Study with Para Research: https://docs.google.com/document/d/1SIRAX31ebaZCFAIJfB4fmNUG3Ix3wCSRWQ7JtxfQ2pU/edit?usp=sharing

Outline for Dynamic Brushes study: https://docs.google.com/document/d/1Z_6FhKf3xeZVbNqEhDEuvC7J2T0pjZxpvOXnt8hEChs/edit?usp=sharing

Timeline:

March 3rd: Introduce Final Project

March 5th: 1-2 paragraph description of proposed final project topic uploaded to Github Assignments folder.

March 10th: 20 min out of class meetings to review final project direction. Sign up here: https://hcicreativetech.youcanbook.me

March 12th: Feedback session with peers. Bring in-progress outline to class to present in groups of three.

March 17th: Written feedback to 1 peer based on in-progress reviews.

March 20th: Final Papers uploaded to Github.