LSRC 594 Final Design Project

[XR learning environment]

Goals:

Students will complete a design project that involves prototyping an educational technology. The project gives you an opportunity to apply your theoretical commitments and design skills to create a prototype computer-based learning experience. For this option we will build the prototype in VR/AR using WebXR or Unity3D with techniques introduced and practiced in class. However, you may choose an alternative authoring tool. If you choose an alternative authoring tool, you should already have some basic proficiency with the tool.

You will write a design specification, develop an alpha version of the software, and embed it within a learning activity. The design project comprises five assignments. The purpose of this assignment is to help you apply the theoretical frameworks and empirical studies from design-based research to realize your own design.

You can work individually or in groups of 2-3

Important Dates

1. **Project Idea: November 9 at 12pm (noon) CST - Central Standard Time**
   A one-page description of your project idea that describes the problem/topic that frames your project.
2. **Design Meeting week-12** Schedule will be posted individually and via iCal
   A 30-minute meeting with the instructor to discuss your project.
3. **Activity Analysis. 11.20** A 1-2 page summary of the literature related to your topic and overview of your prototype design. Building on your requirements analysis, write a "design spec" laying out particular design decisions you made in creating your learning environment. This may be the whole environment described in your requirements analysis, or one smaller component of it, adapting it to a scale at which you can fully specify the design, and develop a prototype. Your design specification should include a discussion of your learning objectives, your key design decisions and rationale, opportunities for data collection, tradeoffs in the design, ways to assess learning outcomes for people using it, and ways to evaluate your design based on those learning outcomes.
4. **Final Paper 12.11** 2-3 page Extended Abstract including references, video figure, still image, and additional information describing what learners will experience as well as technical and space requirements.
   A final paper in ACM Master Article Templates AND Publication Workflow that includes your theoretical framework, design principles, trade-offs, description of the technology and learning activity, and a discussion of potential research questions that might be investigated with your learning environment.
   You will write a 2 page brief proposal for a research study you might like to conduct using your designed environment, specifying the research questions, the role of design in the research process, the research methods to be used, and the logic of the study. The emphasis is on your analysis of what learning phenomena could be studied with the design you are completing, rather than on the specifics of the research methods.
5. **Final Presentation 12.11.** You will present and demonstrate your activity to the class in a design fair via zoom, where you will discuss each component of your final paper in a web page format.

Submission Details

1. Abstract

Examples can be found in the CHI 2019 Extended Abstracts. (Recommended to look at demonstrations)

Proposals should be prepared as a three-page **demonstration** abstract, including references in the ACM SIG Proceedings format, and submitted as PDF in camera-ready format.

- A description of the learning environment and experience, and the problem it addresses. Where relevant, discuss the broader context and questions that your work promotes reflection upon.
- A description of the relevance of the work to the immediate learning sciences community, as well as to the broader CHI community, emphasising its novelty, uniqueness, and rationale.

2. Video

A video is the optimal medium to communicate your demo to the reviewers and provides an archive of the work. You must submit a video in addition to your written documentation.

- The video must be no longer than **30-45 seconds**
- Video must include an opening title

Please make sure that your video is playable on standard PC and Macintosh computers. We recommend that you encode your video as an MP4 using the H.264 codec.
I recommend uploading your video to YouTube and use the provided captioning tools. Further instructions can be found in this step-by-step captioning tutorial or in the Guide to a Successful Video Submission.

Video Previews are a great opportunity to make your work stand out within and outside the community, journalists and the general public.

3. Still Image

You are required to upload a still image of at least 1500 x 1200 px that represents your work. The image is required for web publications and publicity.

4. Supplement information

Alongside your submission, you can provide various supplementary information, such as an explicit description of how learners would interact with your work, an envisioned floor plan, physical equipment needed, etc.

5. Webpage

For your presentation, you will submit your work as a Web page, and it should include (1) the title, authors' names, and affiliations, (2) a concise overview of the research, (3) clear illustrations of key aspects of the proposed work, and (4) a short video of your prototype (5) a compelling visual design. WebPages might also include links to other online materials (e.g., scenario videos, interactive prototypes).

Presentation

You will present and demonstrate your activity to the class in a design fair where you discuss each component of your final paper in a webpage format.

Your webpage can be on google sites,