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CS 6795: Cognitive Science
Summer 2025
Self-Directed Term Project - Overview
Assigned: May 19, 2025
Due: Jul 20, 2025

Assignment Overview:

As stated in the syllabus, this is a project-based class. The term project will be a self-directed project on a topic/theme chosen from the topics listed below, conducted as a mini cognitive science research project. The goal of this project is to give you hands-on experience on conducting cognitive science research, utilizing the knowledge you have learned in the class.

We expect each individual to spend at least 80 person-hours on the project pursuing one of the following "tracks":
- Literature Review: a detailed analysis of a problem from the perspective of cognitive science and survey of the related literature
- CogSci Experiment: a cognitive science experiment
- Computational Model/Tool: a small computational "proof-of-concept" system for the task

The topic/theme of the project can be chosen from the list of topics on computing areas that have strong ties to cognitive science. You might have noticed that we will cover the relationship of cognitive science to the following topics in the later part of the class and completing the primary readings to these classes could be helpful for you to narrow down your project topic, but it is not required:
- Artificial Intelligence
- Learning and Education
- HCI
- Design and Creativity
- Robotics
- Anthropology
- Linguistics
- Philosophy
- Psychology

Project Milestones:

So far we have learned about the basic principles in Cognitive Science, the different representations and processes, and other issues that are yet to be addressed by Cognitive Science. Many fields in computing such as AI, learning and education, HCI, design, creativity, and robotics also adopt and apply knowledge from cognitive science to gain novel perspectives and new insights into addressing the problems they are interested in.

Now that you have learned the basics of Cognitive Science, we want you to take the Cognitive Science perspective to conduct a mini research project and study a problem that you are interested in. The project should result in a small proof-of-concept prototype to illustrate the concept and functionality of your design (e.g., software prototype, video, tutorial, schematic drawings). It would be helpful to look into existing literature on the topic or specific research question that you are interested in studying and see what people have done. Feel free to talk with the TAs about your topic and problem. It is important to scope sufficiently small to make the project feasible.

There will be four deliverables for the term project. All of the report deliverables should be written and submitted in [IEEE format](#).
- **Project Pitch (5 pts) - Deadline: Jun 1, 2025**
  The goal of this milestone is to ensure that you have identified the project topic/theme from the list and given some thoughts to the research questions and methods that you want to explore. You should also show the detailed plan for how to carry out this mini research project.
- **Optional Midpoint Check-In (0 pts) - Deadline: Jun 22, 2025**
  This project check-in is optional. If you would like to use it for feedback on how your project is going, then you may submit it. You will receive a grade out of 10 points so that you have an idea of how your project is progressing, but it is worth 0% and will not contribute towards your overall course grade. It is offered in case you find it valuable for getting feedback from the TA's about whether you're on the right track.
  The goal of this milestone is to make sure that you are halfway through in conducting the literature review/experiment/model/tool. You should be able to show some preliminary findings based on your explorations so far and reflect. You should also demonstrate improvements from Milestone 1 based on your exploration into this project space or based on feedback and discussions with the TA.
- **Final Report (30 pts) - Deadline: Jul 13, 2025**
  This is the final submission for your term project's paper. You should be able to describe your entire literature review/experiment/model/tool in a research paper format.
- **Final Presentation (10 pts) – Deadline: Jul 20, 2025**
  This is your virtual poster and/or presentation. If applicable, you will create a virtual poster and give a 5 minute presentation on your research.

Note: We are unable to accept late work, so please submit all deliverables on time.

Project-Specific Questions:
This is intended to be a self-directed project. If you have questions about your topic or general research direction, please post a private message on Ed; but, understand that

we might not be able to answer every question. Also, keep in mind that it is the intention of the milestone grading comments to provide topic guidance or actionable feedback.