

CSC 425/525 Final Exam (take-home)

Due date: Wednesday, May 3 by 12 pm (submit by email)

NOTE: This final counts the equivalent of 2 homework assignments.

These questions are essay questions. It is expected that your answers are justified with adequate explanations (other than question 6). You do not need to use references but your answers should demonstrate that you referred back to course notes and the textbook. There is no minimum or maximum size required for an answer. Answer all 6 questions.

1. In our first class, we talked about whether strong AI was possible. Given what you have learned, do you view some of the more advanced AI techniques (e.g., HMMs, Bayesian networks, feedward/backprop neural networks) to be strong AI or weak AI? Explain.
2. AI research has shifted over the years. Early on, there was a search for a single approach and representation such as search space search or semantic networks or frames. Later, efforts concentrated on rule-based reasoning, then neural networks, then artificial life and more recently statistical forms of reasoning. Do you think that continued AI research should look for a singular approach/representation? Explain.
3. What types of problems should employ some form of uncertainty? Of the forms of uncertainty handling that we examined in the class, which do you feel are the most useful or would be the ones to use when constructing AI systems? Explain.
4. Given the approaches to machine learning covered in this class, do you feel learning is an important part of creating AI (whether strong or weak)? If yes, what form(s) of learning in particular would be most useful to build some AI program and if no, explain why not. Be specific with respect to the forms of learning covered in the class.
5. In your opinion, what has been AI's greatest success to date? This does not have to be a single system but an approach (e.g., neural networks or hidden Markov models) or the solution to a particular problem (e.g., accurate speech recognition). Explain why you selected the item you did with comparisons to other successful or nearly successful AI results.
6. Here, you are asked to answer questions about the course itself. No explanation is needed.
 - a. Was 425/525 more or less work than most other CSC 3xx/4xx courses?
 - b. Was 425/525 more or less interesting than most other CSC 3xx/4xx courses? If less interesting, list some courses that you found more interesting.
 - c. Did you enjoy 425/525? Why or why not?
 - d. Were the types of assignments for the class (homeworks and programs but no exams) more preferred or less preferred than other advanced CSC courses?
 - e. What topic(s) of the course did you find most interesting? Least interesting?
 - f. Were there topics that should have been omitted? If so, what?
 - g. Were there topics that we should have spent more time? If so, what?
 - h. Should AI be a required course? If so, why do you think that?