COSC 6368 (Fall 2016)

Review List Midterm Exam on October 25, 2016

The midterm exam is scheduled for Tuesday, October 25, 2:30p in our classroom. The exam will take 75 minutes and is open-books and notes and you can bring your favorite bird, but friends and other human beings are not permitted and, more importantly the use of computers is not permitted!

In general, the midterm exam covers everything we discussed so far, except “Introduction to AI”, “Define the State Space for a Search Problem”, “Evolutionary Computing” and “Machine Learning”. Those topics will be relevant for the final exam and not for the midterm exam.

Relevant Slide Set Pasted from the COSC 6368 Website that are relevant for the midterm exam:

2016 Search Transparencies: [Search1](http://www2.cs.uh.edu/~ceick/ai/search1.pptx) (Classification of Search Problems, Terminology, and Overview ), [Search3](http://www2.cs.uh.edu/~ceick/ai/search3.pptx) (Heuristic Search and Exploration), [Search4](http://www2.cs.uh.edu/~ceick/ai/search4.pptx) (Randomized Hill Climbing and Backtracking; not covered in textbook), [Kamil on Backtracking and Mazes](http://www2.cs.uh.edu/~ceick/ai/backtracking.pdf), [Search5](http://www2.cs.uh.edu/~ceick/ai/russel5.pdf) (Games; Russel transparencies for Chapter 6; will not cover transparencies that discuss card games), [Search5a](http://www2.cs.uh.edu/~ceick/ai/search5.pptx) (Brief Discussion of Bridge and Man vs. Machine Game Contests), [Search7](http://www2.cs.uh.edu/~ceick/ai/search7.pptx) (Discussion of Greedy Search and A\*; not covered in the lecture, but it might not hurt to look at the slides). [Suggestions for Solving the Rook+King vs. King Endgame (WRKBK) Problem](http://www2.cs.uh.edu/~ceick/ai/rook.pptx). (last updated on Sept. 17, 2016)

2016 Game Theory Slides: [G1](http://www2.cs.uh.edu/~ceick/ai/G1.pptx): Introduction to Game Theory (USC Economics slide show by Shivendra Awasthi (???), will be used in the lecture)

2016 AI Planning Slides: PL1: Sketch How a STRIPS-like Planning System Solves a Block's World Problem (was done on the white board in the lecture on Tu., Oct. 6 ([Sheet1](http://www2.cs.uh.edu/~ceick/ai/WBP1.pdf), [Sheet2](http://www2.cs.uh.edu/~ceick/ai/WBP2.pdf))), [PL2](http://www2.cs.uh.edu/~ceick/ai/PL2.pptx) (Blythe, Ambile, Gil (USC) *Introduction to Planning* slides, covered in the lecture), [PL3](http://www2.cs.uh.edu/~ceick/ai/ECAI14Rintanen.pdf) (Jussi Rintanen's ECAI 2014 Planning Tutorial; will discuss slides 1-7, 10-14, 31, 51-52) . Moreover, the IJCAI 2016 Distinguished Award Paper "Hierarchical Finite State Controllers for Generalized Planning" by Javier Segovia, Sergio Jimenez and Anders Jonsson ([Paper Download](http://www2.cs.uh.edu/~ceick/ai/planning.pdf)) is relevant for the midterm exam; however, 1-2 general questions and no technical questions will be asked in the midterm exam about the paper.

Tentative Weights of 3 main topics in the midterm exam: Search 70-75%, Game Theory 5-10%, Planning: 15-25%.

Relevant material from the Russel textbook (Third Addition):

Chapter 3: pages 64-99, 102-107; Chapter 4: 120-126 Chapter 5: 161-180 (the discussion of card games is also relevant, but just take Dr. Eick’s slides is your knowledge source), Chapter 17: 666-669, 674-676, Chapter 10: 366-374 Chapter 11 406-408

Material that was discussed in class that is relevant for the midterm exam (but not necessarily is discussed in the textbook):

a) Backtracking algorithm

b) Simulated Annealing, traditional Hill Climbing and Randomized Hill Climbing

c) Algorithm to computer the Nash Equilibrium