COSC 4368 (Spring 2020)

Review List Final Exam on Monday, May 4, 2020, 2p

The 4368 final exam will take 95 minutes and is open-books and notes and has two parts: the first part A which will take 50 minutes will be a multiple choice exam—similar to the Midterm2 exam; the second part which will take 45 minutes will allow for arbitrary length text answers to the questions and tasks of the second part B. The two part will be administered in Blackboard as two separate exams; more detailed instructions on how to take the 4368 final exam on May 4, will be posted on the COSC 4368 website by May 2, 11p the latest.

Relevant slide shows and videos, pasted from the COSC 4368 Website which are relevant for the Midterm2 exam:

* [2020 Introduction to AI and Course Information COSC 4368](http://www2.cs.uh.edu/~ceick/ai/4368-Intro-2020.pptx)  [China's AI Strategy](https://www.cnas.org/publications/reports/understanding-chinas-ai-strategy) (please read the introduction, and items 1, 2, 7, 8, 16, and the conclusion)).
* 2020 Teaching Material Evolutionary Computing (**EC**): EC1: [Introduction to Evolutionary Computing](http://www2.cs.uh.edu/~ceick/ai/EC1.pptx) and EC2:[Example: Using EC to Solve Travelling Salesman Problems](http://www2.cs.uh.edu/~ceick/ai/EC2.pptx), [Eiben-Smith Introduction to EA](http://www2.cs.uh.edu/~ceick/ai/Eiben-Smith-EC.pdf) (they call 'EC': 'EA'!), [April 6 EA-paper Walkthrough Notes](http://www2.cs.uh.edu/~ceick/ai/EA-Walkthrough-Notes.docx).
* 2020 Machine Learning Transparencies:
  + Neural Networks: [NN1](https://www.bing.com/videos/search?q=neural+network+video&view=detail&mid=54402D363ABB8903202F54402D363ABB8903202F&FORM=VIRE) ([3blue1brown](https://www.3blue1brown.com/): *What is a Neural Network?* (will show the first 12:30 of this video)), [NN2](http://www2.cs.uh.edu/~ceick/ai/NN2019.pptx) (Dr. Eick's NN slides)
  + [Support Vector Machines](http://www2.cs.uh.edu/~ceick/ai/SVM.pptx) ([Review of the SVM lecture](http://www2.cs.uh.edu/~ceick/ai/SVM-Review.docx); added on March 2020
* 2020 Decision Making and Reasoning in Uncertain Environment Transparencies
  + [Review Probability Theory](http://www2.cs.uh.edu/~ceick/ai/Probability-Review.pptx)
  + [Bayes' Theorem"](http://www2.cs.uh.edu/~ceick/ai/bayes.pdf) and [Naive Bayes Classifiers](http://www2.cs.uh.edu/~ceick/ai/NBC.pptx) ([Wikipedia NBC Reading Material](https://en.wikipedia.org/wiki/Naive_Bayes_classifier))
  + A few slides of Russel's [Introduction to Belief Networks](http://www2.cs.uh.edu/~ceick/ai/chapter14a.pdf) (to be covered in lecture) and Dr. Eick's [Computations in and with Belief Networks](http://www2.cs.uh.edu/~ceick/ai/Bbn.pptx)Transparencies
* 2020 Ethical and Societal Aspects of AI (extended coverage in 2020!!)
  + [Human Do not Need to Apply](https://www.youtube.com/watch?v=7Pq-S557XQU&feature=youtu.be) (a video that analyzes the influence of AI on jobs;)
  + [Ethics for AI](https://www.bing.com/videos/search?q=ethics+for+ai+video&view=detail&mid=40EB460FED93E484CA8740EB460FED93E484CA87&FORM=VIRE) (short video, motivating the need for ethics for AI and what problems it needs to address)
  + [Top Nine Ethical Issues in AI](https://www.weforum.org/agenda/2016/10/top-10-ethical-issues-in-artificial-intelligence/)
  + [European Commission efforts in building trust into *human-centric AI*](https://ec.europa.eu/futurium/en/ai-alliance-consultation/guidelines#Top)

Composition of the exam: Decision Making in Uncertain Environment (50-55%), Ethics and Societal Aspects of AI (20%), all other topics (25-30%)

Reading Material:

<https://www.cnas.org/publications/reports/understanding-chinas-ai-strategy> (please read; will only ask questions about the introduction, and items 1, 2, 7, 8, 16, and Conclusion)

SVM Wikipedia Page: <https://en.wikipedia.org/wiki/Support-vector_machine>

Eiben-Smith EC Article (used in walkthrough)

<https://en.wikipedia.org/wiki/Naive_Bayes_classifier>

[Top Nine Ethical Issues in AI](https://www.weforum.org/agenda/2016/10/top-10-ethical-issues-in-artificial-intelligence/)

[European Commission efforts in building trust into *human-centric AI*](https://ec.europa.eu/futurium/en/ai-alliance-consultation/guidelines#Top)

Relevant material from the Russel textbook (Third Edition):

Chapter 13: 495-499

Chapter 14: 510-517, 522-524

Chapter 18: 695-697 727-737 744-748

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