

CS 4002 Robots and Society Final Exam, Spring 2008

Although this is a take home exam, please remember that the honor code is in effect. You are not to discuss this exam in any way shape or form with anyone else (within the class or otherwise) until the exam has been submitted and the oral component completed at the end of the scheduled examination period.

Please pay close attention to the directions below. Answers that fail to adhere to these instructions will be considered non-responsive and given no credit whatsoever.

The written portion of your exam is due electronically no later than April 28 4:59:59 AM EDT to arkin@cc.gatech.edu *and* zkira@cc.gatech.edu with the subject line “4002 final”. You are expected to send a single PDF file containing your answers to the exam question. The text must be in Times font, 12 pt., single-spaced with 1” margins. Name the file yourlastname-final. You must also submit separately at the same time one Powerpoint, or PDF slide for each question answered. Include it as a separate attached file in your email submission. Name the file yourlastname-slides. Finally, note that each question is given a minimum and maximum number of pages. Those page counts do not include your extensive reference sections (a minimum of 4 *relevant* references, hopefully more).

The elections are over! Finally! The new president now has to fill out his/her cabinet. Due to your superb education at Georgia Tech, he has selected you as the nominee for Chief Science Officer for the US (a newly established cabinet post – that expands and consolidates the duties of the previous positions of the Director of Research and Engineering for the Department of Defense, Director of the National Science Foundation, Director of the National Institutes of Health, and so on for NASA, Department of Energy, Environment, etc.)

But first you must attend confirmation hearings before the Senate!

Unfortunately, newly elected additions to the Senate include a group of neo-luddites who are represented on your confirmation hearing committee, who fear, among all things, robotic technology – thanks to their having read Bill Joys’ article “The Future doesn’t need us”. In addition there are also present on your committee Super-technophiles, who view that the US has lost its lead in robotics and must recover it no matter what the cost. They also believe, as fans of Moravec and Kurzweil, that utopia awaits humanity through technology, and we need to get there soon!

You must respond to their questions on the future of robotics and justify your position regarding an appropriate course of action our nation must take with respect to this new robotic technology in order to be successfully appointed. Fortunately you can draw on your experience of CS 4002 to assist you in this grand challenge. It doesn’t matter whether you yourself personally agree or not with the neo-luddites or super-technophiles on the committee. Your challenge is to help reconcile these views.

(A) (2-3 pages) With your opening statement at the confirmation hearings, clearly state what we as a nation should do in terms of investing in robotic technology in the future – what if any areas are off-limits? What will we lose if we don't achieve these goals? What consequences do we face if we do not pursue robotics technology aggressively and what fears must we face if we do? Make your arguments both logical and factual to establish a clear course of action for our nation.

(B) Aggressive questioning from the committee follows your opening statement:

(1) *Neo-Luddite*: "Bill Joy says the extinction of humanity is near – potentially caused by robotics technology – why on earth should we invest in robotics? Shouldn't there be an outright ban on anything related to it?" (1-2 pages)

(2) *Super-Technophile*: "Robotics technology can certainly create a Utopian future for us, no more work, no more wars, better marriages, better health – even immortality! At the very least it can help recover our economy from the outsourcing and military threats that face us. In addition, our health can only improve through physical enhancements using this technology – we should offer cyborg implants to any citizen that wants them! Isn't all of this true? "
(1-2 pages)

Remember that your goal is to reconcile these points of view as best as possible to ensure your successful confirmation so you can really make a difference. Argue toward that end effectively.

FOR THE SLIDES:

Create the following slides:

- (1) A summary of the main points of your opening statement – no more than 5 bullets
- (2) A summary of your response to the neo-luddite's question – no more than 3 bullets
- (3) A summary of your response to the super-technophile's question – no more than 3 bullets.

You will have only *5* minutes during the oral exam to speak to these slides. You will not be interrupted nor will there be any questions following your presentation. It would be wise to practice in advance to make sure you use the 5 minutes effectively. Good luck!

Please bring your slides to your oral presentation on a memory stick (preferable) or CD-ROM in addition to mailing them.

Point structure: Question A: 40 points
Question B(1): 20 points
Question B(2): 20 points
Slides and oral presentation: 20 points