**COMS 493 – AI, Robots & Communication**
Dr. David J. Gunkel
Final Examination Study Guide

The final examination is scheduled for 90 minutes and will consist of four parts.

**I. TALK THE TALK** (10 x 1 point each)
Define the following acronyms and technical terms. For the acronyms, you can either explain what they mean or spell-out their elements. (i.e. NSF = "A national organization that funds scientific research and education" or "National Science Foundation").

- AI, AGI, IA, H2M, M2M, CMC, SDS, MT, NLP, AIML, CALO, DARPA, ASR, TTS, ECA, GOFAI, AMA, RUR
- Strong AI, Weak AI, AI Winter, Algorithm, Machine Ethics, Chatterbot, Big Data, Ontology, Technological Unemployment, Loebner Prize, Sociable Robot, Luddite Movement, Socialbot, Lights-Out Factories, Algo Trading, Machine Learning, Anthropomorphism, Bête-Machine

**II. IT'S WHO YOU KNOW** (10 x 2 points each)
Briefly identify each person(s) listed below by indicating the contribution(s) s/he has made to the development of or debate concerning communication technology.

> Douglas Englebart, ELIZA, John McCarthy, Arthur Samuel, Deborah Johnson, David Cope, Cynthia Breazeal, Jibo, Rodney Brooks, Joanna Bryson, Peter-Paul Verbeek, Kate Darling, Leonardo, John Searle, Alan Turing, Tay.ai, Kevin Slavin, Joseph Weizenbaum, AlphaGo, Mohammed ibn-Musa al-Khwarizmi, Warren Weaver, Tom Gruber and Adam Cheyer, Shimon, John Maynard Keynes, Andrew McAfee, Kristian Hammond, Watson, Karl Čapek

**III. SHORT ANSWER** (5 x 8 point each)
Provide short responses (4-6 sentences) to the following questions:

1. What is “the instrumental theory of technology”? Define the theory and give an example.
2. Social interactions involve at least two components: an agent and a patient. What do we mean by the terms “moral agent” and “moral patient?”
3. What is Actor Network Theory? What is the principal advantage of this approach to assigning accountability? What is its principal disadvantage?
4. Briefly describe the Chinese Room thought experiment? Who came up with this concept? And what is it supposed to illustrate?
5. What is the “other minds problem?” And why is it a problem for deciding who or what is intelligent?
6. Describe the basic structure and significance of Alan Turing’s game of imitation or the Turing test.
7. What is the main operational difference between rule-based machine translation and statistical machine translation?
8. What is the trolley problem? What is it designed to illustrate?
9. The properties approach to deciding whether something is a moral subject or not involves three steps. What are the three steps of the properties approach?
10. Isaac Asimov proposed three laws for robots. What are Asimov’s three laws of robotics?

11. In *The Media Equation*, communication researchers Byron Reeves and Clifford Nass formulated a theory they called “the computer as social actor (CSA)”? What is the “computer as social actor” theory? What is its main point?
12. In their 1985 article, "The Person-Computer Interaction,” Robert Cathcart and Gary Gumpert draw a distinction between communicating *through* a computer from communicating *with* a computer. Explain the difference between these two different forms of communication and provide an example of each one.

**IV. ESSAY** (1 x 30 points)
The final part of the exam will provoke critical reflection on or assessment of a particular issue previously discussed in seminar meetings. You will be provided with three options. You are to select one and write an essay response to the question or problem described. Please remember that this is an essay response. You must have a clearly stated thesis, evidence and support to prove your thesis, and a conclusive ending. Unlike the other three sections, there is not necessarily a right answer in this section. There are only well devised and argued responses.

**Exam Procedure:** The first three parts of the exam will be written on the examination sheet. Students will write responses to these questions WITHOUT any support material (i.e. notes, books, online resources, etc.). The essay will be written on the computer and will be assessed for both content and mechanics (grammar, punctuation, spelling, etc.). Since the essay is not about a “right answer” but about a well-crafted argument, students may use support materials (i.e. class notes, books, online resources, word processing tools, etc.). The essay will be printed and turned in to the instructor at the end of the exam period.