

# Artificial Intelligence

## Joint class 5314 / 4320

### Exercises – 1/20/05

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**Exercise 1** *List the skills and knowledge required to successfully do the following everyday tasks: reading a book; crossing the road; ordering a pizza; arranging a trip to the cinema.*

**Exercise 2** *Suggest two expert tasks, which you think might be suitable for an expert system. Describe why you think it would be useful to automate the tasks, and what knowledge you think the system would need.*

**Exercise 3** *Suppose you have to develop a program to suggest good road routes between two given cities. State what knowledge would be required for such a system, and suggest how it might be represented. Try to sketch an algorithm that could be used to find a good route.*

**Exercise 4** *If you were a judge at the Loebner contest (Turing test), what questions would you ask to determine whether you were communicating with a computer or a human? Suggest some possible answers that a program might give to tricky questions that would seem human-like, but which avoid answering questions.*

**Exercise 5** *Suggest a design for a basic intelligent agent for monitoring and selecting articles from newsgroups, that might be of interest. How would you allow people to describe their interests? How could articles be matched given these interests? How could the user profile be updated based on information about which articles the user actually chose to read?*

**Exercise 6** *Suppose you are to design a robot that is to be able to navigate across a room. There are various large items of furniture in the room. Suggest two possible approaches, one which makes use of an internal model of the room, and one which does not use any such model.*

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**Important remark:** these exercises are not to be turned in.