

CS/PSYCH L271 – Intro to Cognitive Science – Fall 2009

Instructor: Marc Pomplun

Assignment #4

Posted on December 2 – due by December 8, 4pm

Question 1:

As you know, there is a fundamental distinction between two different approaches to Artificial Intelligence: symbolic AI and connectionist AI. Please give three examples of AI applications for each of these two approaches. Explain for each example why you would choose that particular approach for its implementation and not the other one. The examples should be clearly different from each other; for example, you should not list “chess-playing program”, “checkers-playing program”, and “go-playing program” as the three examples for one of the approaches.

Question 2:

If functionalism is correct, then eventually the steadily growing computational power of machines should one day allow us to simulate an entire human brain, including sensors, e.g., visual, tactile, etc. Given today’s knowledge about artificial and biological neural networks, which functions or properties of the human brain do you think could be copied in the near future, and which will not be replicated within the next few decades (if ever)? Another important question is whether scientists should actually build a complete synthetic brain if they could. Please answer these questions and give reasons for your answers. You should write at least one double-spaced page of text.