

AI making – esercizi Cap 1

CORSO DI INTELLIGENZA ARTIFICIALE 1

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1.7 To what extent are the following computer systems instances of artificial intelligence?

- Supermarket bar code scanners.
- Web search engines.
- Voice-activated telephone menus.
- Internet routing algorithms that respond dynamically to the state of the network.

1.8 Many of the computational models of cognitive activities that have been proposed involve quite complex mathematical operations, such as convolving an image with a Gaussian or finding a minimum of the entropy function. Most humans (and certainly all animals) never learn this kind of mathematics at all, almost no one learns it before college, and almost no one can compute the convolution of a function with a Gaussian in their head. What sense does it make to say that the “vision system” is doing this kind of mathematics, whereas the actual person has no idea how to do it?

- 1.10** Is AI a science, or is it engineering? Or neither or both? Explain.
- 1.11** “Surely computers cannot be intelligent—they can do only what their programmers tell them.” Is the latter statement true, and does it imply the former?
- 1.12** “Surely animals cannot be intelligent—they can do only what their genes tell them.” Is the latter statement true, and does it imply the former?
- 1.13** “Surely animals, humans, and computers cannot be intelligent—they can do only what their constituent atoms are told to do by the laws of physics.” Is the latter statement true, and does it imply the former?
- 1.15** Various subfields of AI have held contests by defining a standard task and inviting researchers to do their best. Examples include the DARPA Grand Challenge for robotic cars, The International Planning Competition, the Robocup robotic soccer league, the TREC information retrieval event, and contests in machine translation, speech recognition. Investigate five of these contests, and describe the progress made over the years. To what degree have the contests advanced the state of the art in AI? To what degree do they hurt the field by drawing energy away from new ideas?

Modeling for AI

Try to formulate the ER schema of the example on the right and then create a relational representation in SQL for the depicted situation.

Typical queries:

- How many cubes are in the figure?
- How many pyramids are red?
- What is the group of solids of the same color with the largest number of members?
- Is a pyramid into a container?
- What is the color of the pyramid that is on a green cube

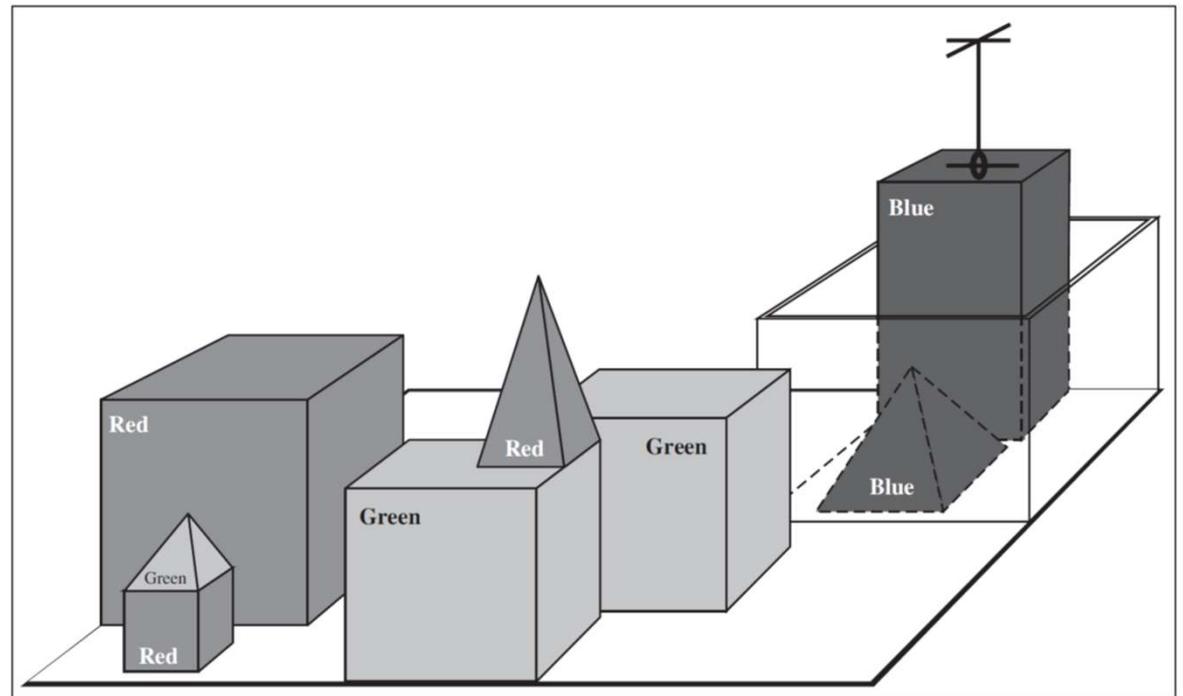


Figure 1.4 A scene from the blocks world. SHRDLU (Winograd, 1972) has just completed the command “Find a block which is taller than the one you are holding and put it in the box.”