

SC42050 Literature Assignment

Artificial intelligence on the IBM Watson computer

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The IBM Watson computer is a very nice and probably the most visible example of what current Artificial Intelligence (AI) techniques can achieve in terms of understanding natural language and generating hypotheses based on information stored in knowledge bases and on the Internet. After having earned reputation by the superb performance in the TV game of Jeopardy, it is now being tested in serious applications, such as healthcare.

Watson is said to combine natural language processing, machine learning, and hypothesis generation and evaluation to give direct, confidence-based responses (IBM). There is the wealth of articles about Watson that describe in general terms how the AI behind the system works. However, there seem to be no articles describing in a concise form the specific techniques used and the technical details. The goal of this assignment is to gather this information and write such an article. More specifically:

- What are the general steps in Watson's reasoning? Describe them in general and using examples.
- What specific techniques are used and how do they work? Also here examples of the specific use of the techniques are welcome.
- How does Watson deal with the ambiguity of natural language?
- Can Watson learn from its own mistakes. What type of learning is used?
- Is different type of reasoning used in medical, healthcare or other application of Watson different from the game of Jeopardy?

Do not limit yourself to the above questions, they are meant as sole suggestion or leads to start your search.