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Watson and the Jeopardy! Challenge

According to “Watson and the Jeopardy! Challenge” in *Predictive Analytics*, Watson, which was created by IBM, joined as a participant on “Jeopardy!”. It competed with two other formidable human opponents. Finally, Watson won the game. This case shows that people are able to use artificial intelligence to make a computer machine work adeptly with human language. Before Watson could win the game, there were two achievements needed to be done. First, Watson had be able to process text analytics well. Second, once it could understand questions, it was able to answer questions. In “Jeopardy!,” every question was open and unbounded. Anticipating all the questions was impossible. IBM created a predictive model which used “Jeopardy!” questions and correct answers to proceed training. This model would give a score for each answer and then choose the one with the highest score as the final answer. After this approach, IBM still could not obtain a successful result due to the following two reasons. The first problem was that open question answering created immense challenges in terms of language analysis and human reasoning. In addition, language rules are fluid, and word meaning changes according to how people use them. The other problem was that “Jeopardy!” needed to have a high accuracy of answers. Thus, IBM changed their policy. It introduced “Evidence” into Watson’s predictive model. Consequently, Watson’s predictive model worked as follows. Watson collected candidate answers through documents and databases and then gave evidence for every answer. Next, Watson inputted these candidate answers with evidence scores into Watson’s new ensemble model. Finally, the ensemble model gave every candidate answer a confidence level, and Watson would choose the answer with the highest confidence as the final answer. In addition, one more requirement was speed. Because of this, Watson employed thousands of CPUs. This kind of hardware meant that Watson was able to process thousands of tasks simultaneously. As a result, although Watson could not answer all the questions correctly, it still won the game. It is valuable to note that people can create a computer machine which has not just information but also knowledge.

One of the famous examples of machine learning and artificial intelligence is AlphaGo, which was developed by Google and was created to play the board game Go. In 2017, AlphaGo was awarded professional level 9 in the board game. AlphaGo used an artificial neural network to process its machine learning. It also provided evidence that machine learning and artificial intelligence have been flourishing for a long time. A lot of industries are investing resources in introducing machine learning and artificial intelligence into their field and desiring to make a profit from this technology. In my opinion, although these technologies can be helpful in improving human life, I profoundly suggest that people still need to build up a protection wall to prevent these technologies from destroying human beings.