Paper Reading Template

AI-For-NLP Course Group

|  |  |  |
| --- | --- | --- |
| Date | 2019/10/8 | |
| Title | Computing Machinery and Intelligence | |
| Author | A.M.Turing | |
| Question/Task | Description | You Answer |
| 1. Classify this paper | Is this paper pragmatic or theoretical?  Is this paper on science or engineering? | Theoretical  Science |
| 2. Brief Summary | Using the as short as possible to summarize the paper content. | Machine intelligence: evaluation method, contrary views and design of realization. |
| 3. Outline | Outlining the content as multiply parts.  For example, for one paper, you may outline the content as following:  1. Background  2. The other Researcher’s method  …  8. Future Planning  And explain how does these outlines work together to make this article completed. | 1.Background: lack of unambiguous way to evaluate machine intelligence.  2. Evaluation method: Whether imaginable digital computers can well mimic human behaviors in the imitation game so that the interrogator cannot distinguish.  3. Contrary views and refutation: theological objection/mathematical theorem/afraid of losing superiority/consciousness/ machines' disabilities/lack of originality/continuity in nervous system/informality of behavior/extrasensory perception  4. Realization of machine intelligence: design of learning machine including structure of child machine, changes brought by coaching, and natural selection per judgment of the experimenter.  The author starts from turning an abstract question "can machines think" into an unambiguous and practicable test. Then he explains why he thinks machine intelligence is possible to be realized through refutation against main contrary views. Finally he provides the design of a learning machine that may help realize the thinking machine. |
| 4. Mainly Issue | What is the issue that author want to solve? | The anticipation of the realization of machine intelligence; Evaluation of machine intelligence and machine design. |
| 5. Find the difficult or important words. | Find what words you are not understood and explain it by yourself.  Find important words in this article. | Artificial signaling  Errors of conclusion  Supercritical  Ephemeral validity |
| 6. Find the difficult sentences confusing you and explain what they mean. | 找出文中你不太懂的句子，试着解释他，最好用另外一种解释方法解释。不要玩文字游戏。  例如，《纯理性批判》里有一句话“除了实际存在的事物，没有任何东西能发生作用“。如果你解释成“如果某个东西不存在，那么它就不能发生作用“，这就属于玩文字游戏。比较合理的解释一个例子是”只靠可能会下的雨，青草是不会生长的“或“只靠可能有的存款，一个人的账号是不可能增加的“。 | Is there a corresponding phenomenon for minds, and is there one for machines? There does seem to be one for the human mind. The majority of them seem to be "subcritical," i.e., to correspond in this analogy to piles of subcritical size. An idea presented to such a mind will on average give rise to less than one idea in reply. A smallish proportion are supercritical. An idea presented to such a mind that may give rise to a whole "theory" consisting of secondary, tertiary and more remote ideas. Animals minds seem to be very definitely subcritical. Adhering to this analogy we ask, "Can a machine be made to be supercritical?"  The above discusses whether a machine can only do what we tell it to do or there's any potential for originality. The author thinks if we could build up a supercritical machine that comes up with more remote ideas after the injection of initial idea, the originality is possible to be realized. |
| 7. Find the main sentences author written. | Find out sentences which could express the intention of author mostly. | We may hope that machines will eventually compete with men in all purely intellectual fields. |
| 8. What have been solved and what not have been solved? | What problems or issues the author have solved?  What problems or issues the author haven’t solved? | Issues solved: evaluation method of machine intelligence  Issues unsolved: the author provides the framework of a leaning machine and conjectures on future development of thinking machines, however, most of the statements are theoretical and need further specification and research. |
| 9. Rethink of the paper | Can you explain the paper main content to others?  Can you explain the paper to your wife/husband?  Can you explain the paper to a kindergarten pupil?  This answer ***cannot be Yes/No simply.*** *Please write the explanation with integrity.* | I may be able to explain the article to colleagues, friends and others that have heard about machine intelligence, but may have difficulties in terms of explaining to kindergarten pupil. As the article is more like a theoretical framework, to connect it with the practical works or turn it into simple words that children can understand, I still need to read more articles to have a deeper and concrete understanding. |
| 10. Which parts do you agree with the author?  Why do you agree with these? | Find out the opinions of author that you agree with.  Give the reason why do you agree with. | "Who can be certain that "original work" that he has done was not simply the growth of the seed planted in him by teaching, or the effect of following well-known general principles."  The concept of originality is quite abstract and mysterious. However I agree with the author that data and general principles may give rise to original work as well. Machine intelligence does not only mean do what we tell it to do with high efficiency, but also may involve original work. |
| 11. Which parts do you not agree with the author? | List the parts or opinions that you do not agree with author. | "For suppose we could be sure of finding such laws if they existed. Then given a discrete-state machine it should certainly be possible to discover by observation sufficient about it to predict its future behaviour, and this within a reasonable time " |
| 12. Why do you not agree with? | Classify each answer of question 11 as following types:  1. uninformed: 信息不足，必要的信息没有给到；  2. Misinformed: 论点与实事相反或不切合；  3. Logic Error; 逻辑错误，例如马基雅维的《君主论》里边：  所有的政府，不论新或旧，主要的维持基础在法律，如果这个政府没有很好的武装力量，就不会有良好的法律，也就是说，只要政府有很好的武装力量，就会有好的法律。  里边的逻辑错误在于“ 政府有很好的武装力量“ 应该是”有好的法律的“ 必要不重复条件，依照所述的逻辑，如果有好的法律，那么肯定有好的”武装“，但是有好的”武装“并不一定有好的法律。  4. Uncompleted Analysis; | Logical system is still a difficult problem for machines. Although it is true that we could be sure of finding such laws if they existed, however rules are not static, many of them with ephemeral validity. Whether machines can do well in logical problems depends on whether the speed machine get used to the logical rules can keep up with the changes in logical system and the amount of the unstandard logical rules. |
| 13. Is this article helpful to you?  How can you use these knowledges in your life or in future? | 简述这篇文章是否对你有用，对你以后哪些场景下回使用到？ | The article shows many conjectures and anticipations of machine intelligence. It gives me a larger picture of this concept theoretically. |