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Julien M. Meyer
Ryerson University, julien.meyer@ryerson.ca

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Investigating the determinants and conditions of trust in AI by physicians

An online experiment on the influence of AI on decisions by pathologists

Julien Meyer, Ted Rogers School of Management, julien.meyer@ryerson.ca

Algorithmic analysis of pathology images is one of the most promising and advanced applications of Artificial Intelligence to medicine. The success and impact of such systems, however, depends on their adoption by physicians (He et al. 2019). Few AI systems are currently being used in the field (Tizhoosh and Pantanowitz 2018) and it is uncertain to what extent pathologists will adopt AI and rely on its recommendations (Tschandl et al. 2020).

Researchers has investigated the factors associated with reliance on AI in various situations, such as the algorithmic nature of the advice, transparency, accuracy, task complexity and effort, which we cannot all reference here. However, not enough is not on its application in medicine, especially when it comes to advice provided to experts in the field of the recommendation. This becomes critical as the scope of AI is expanding to increasingly complex tasks.

With a team of researchers, we conducted an online experiment with pathologists to test their reliance on AI to assess prostate cancer under different conditions (Meyer et al. 2021). In this TREOS, I want to explore the next steps with other researchers in the field. These next steps would include to conduct more experiments with pathologists to test hypotheses such as:

1. comparing the reliance on AI versus human advice,
2. comparing the influence of advice provided upfront or as quality assurance (after pathologists have made a diagnosis on their own)
3. exploring the extent and conditions under which pathologists would rely on wrong recommendations.

References

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