Response to the UK IPO
'Open consultation: Artificial intelligence call for views: patents'

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Question

13. Does or will AI challenge the level of inventive step required to obtain a patent? If yes, can this challenge be accommodated by current patent law?

Answer

Yes, AI challenges the level of inventive step required to obtain a patent. However, current patent law can accommodate this challenge by readjusting the obviousness analysis.

Question

14. Should we extend the concept of "the person skilled in the art" to "the machine trained in the art"?

Answer

No, while the concept of 'the person skilled in the art' requires readjustments by taking into account the advancement of AI technologies, considering the current level of AI technologies it should not be extended to the 'the machine trained in the art'.

While AI has the potential to boost innovation, it also raises several important ethical, social, political and legal issues. Among the latter are the challenges that AI poses for the patent system. With the rapid evolution of AI technologies and the increase in their computational power, the process of inventing has undergone substantial changes. AI technologies have now reached such a level that they are capable of producing outputs with only limited human involvement.

The application of AI in drug discovery is a good example of how these technologies are changing the process of innovation. The conventional process of drug discovery is very lengthy, complex and expensive due to its unpredictable nature. Today, AI has the potential to revolutionise this process. AI significantly augments human capabilities, shifting the key stages of the inventive process from human ingenuity and perseverance to the computational powers of AI. This, in turn, may transform pharmaceutical innovation from the serendipitous and unpredictable field of drug discovery into a more structured, efficient, speedy and predictable process. AI has been increasingly employed at all stages of drug discovery, starting from target identification and the selection of hits and leads to designing clinical trials. All these stages were previously fraught with uncertainly and serendipity. AI is able to remove this uncertainty by accurately predicting results and enabling researchers to make decisions based on scientific evidence. As AI significantly expands human capabilities, inventions that were previously the result of human ingenuity, perseverance or serendipity can now be achieved by routine experimentations with the use of AI.

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While such outputs, if they were produced by a human inventor, would be capable of attracting patent protection, does this mean that inventions created with the assistance of AI should be afforded the same treatment? This submission argues that the approaches developed around a human inventor, including the obviousness analysis, are not suitable to analyse AI-assisted inventions and need to be re-examined. If the standard remains unchanged, this will set a very low bar for patentability, i.e. the results of routine activities generated by AI will be credited with unjust patent monopoly leading to an increasing number of patents. This, in turn, will exacerbate an already major problem of patent accumulation in the pharmaceutical field that contributes to high drug prices and the unaffordability of medicines.

This submission proposes the following:

- The proper test for the obviousness analysis needs to take into account the advancement of AI technology, which should be adequately integrated into the assessment to provide a fair benchmark for AI-assisted inventions. To achieve this, AI should be incorporated into the standard of the skilled person as a tool that such a person uses to achieve the invention.

- To establish an appropriate level of skills and technology for the skilled person, such a person must be equipped with an equivalent AI that was used in the creation of the invention or the best available AI in the relevant field. The use of an equivalent AI, or a superior one, would help to concentrate the analysis on the capabilities and knowledge of the skilled person, rather than on the computational powers of AI.

- Once an appropriate benchmark is set, the obviousness analysis would need to consider whether it would be obvious for the skilled person to achieve such a result using AI.

- It is also submitted that the use of AI significantly increases the level of a reasonable expectation of success and, in some cases, such an expectation can be presumed.

- Finally, in certain circumstances, the use of AI in the process of drug discovery may be considered a routine procedure. In the absence of some evidence demonstrating that, in order to arrive at the invention, the skilled person would have to overcome some problems in a non-obvious way, the results of such a routine process may be considered obvious.

While the suggested approach elevates the bar for patentability of AI-assisted inventions, it, nevertheless, reflects the advancements of AI technology in the field. It is believed that this approach will provide a fair balance of protection granted to the owners of patents on AI-assisted inventions and society.

<u>For a more detailed discussion on these issues, please see:</u>

- *Olga Gurgula, 'AI-Assisted Inventions in the Field of Drug Discovery: Readjusting the Inventive Step Analysis' (2020) 2(8) International Journal of Social Science and Public Policy 7, available at* <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=368312>.