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The Impact of ChatGPT on Legal Research: The Missing Pieces of the Puzzle

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"The wise man knows what he does not know." –Lao Tzu

"The wise machine knows what it has not been trained on." –Alphabet

The strengths of today's current large language models (LLMs) like GPT-3.5 or ChatGPT in terms of power and effectiveness are well known, as are their weaknesses, in terms of deficient responses or even hallucinations. Whereas GPT-4.0 has improved response quality and reduced the degree of deficient responses (82% less likely to respond to disallowed requests and 40% more likely to produce factual responses), the Achilles heel of these applications remains knowing what it does not know, that is, knowing when a question has been asked for which it has not been sufficiently trained. Such instances most notably include questions that address things that have occurred very recently and address facts or outcomes that were not represented in the applications' training data. In this talk, I will address contemporary approaches being explored by academics and industrial researchers to provide such LLMs with access to repositories of knowledge and retrieval mechanisms that can help close this gap, and, ultimately, to permit these systems to have their cake and eat it too. To date, this framework has come to be known as retrieval-enhanced machine learning (REML). This new framework and its associated approaches promise to pave the way forward for expanded LLM coverage and ML training under the banner of a still more powerful next generation of AI.