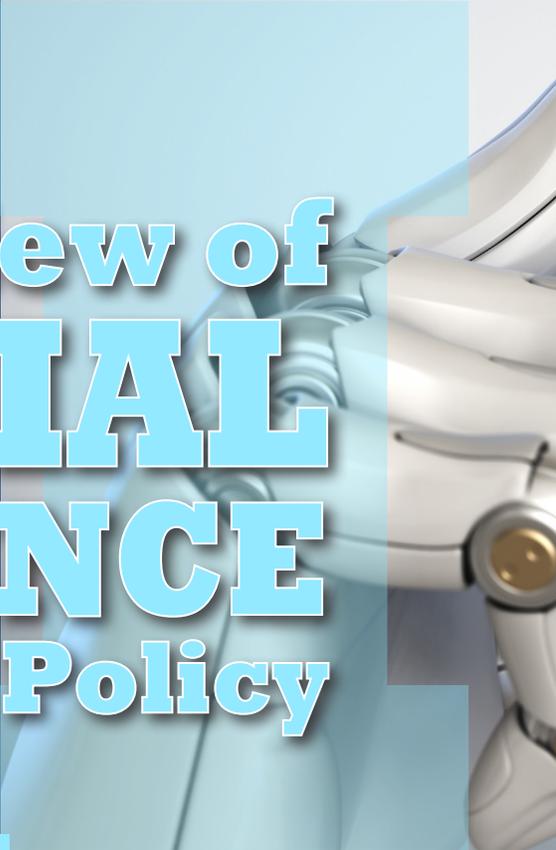


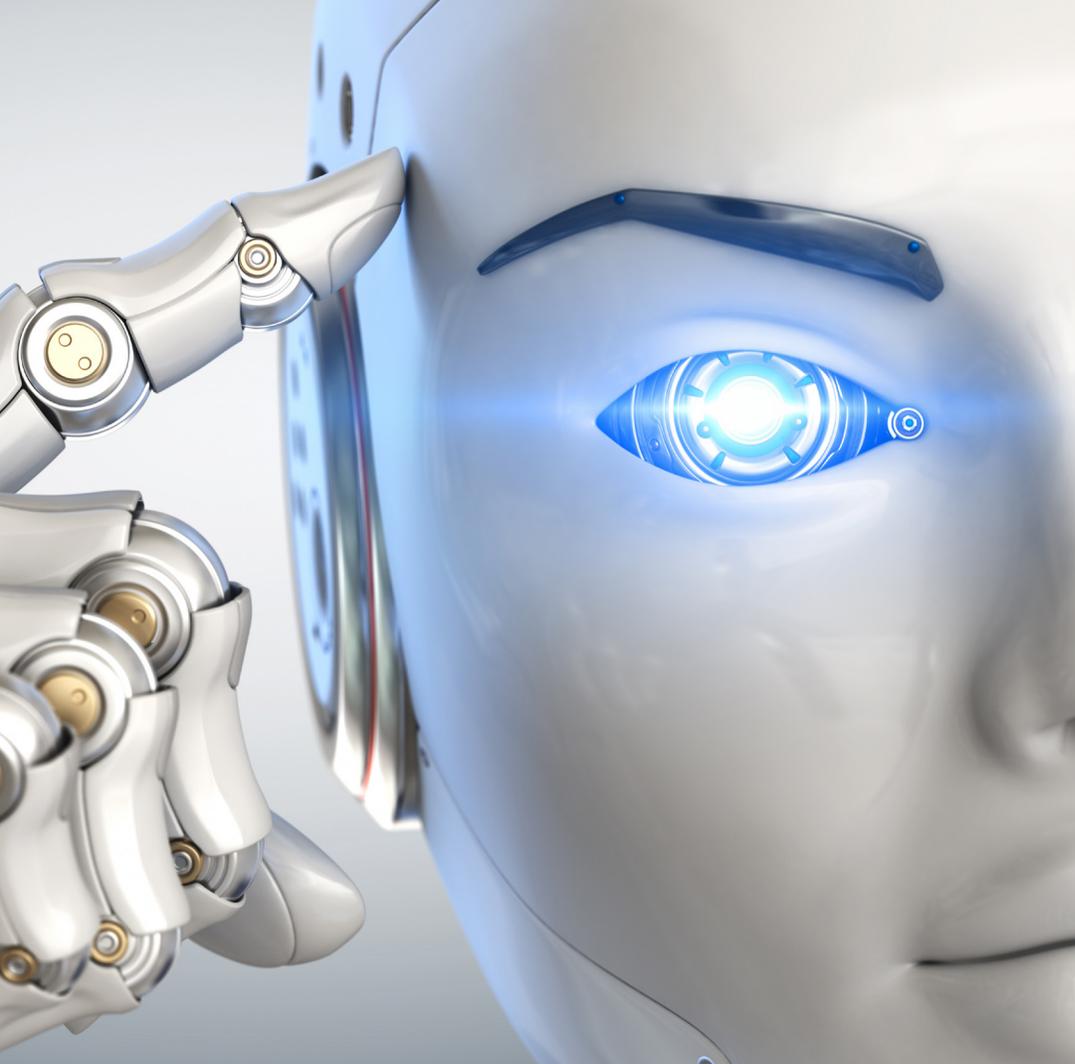
A Brief Overview of ARTIFICIAL INTELLIGENCE Application and Policy



BY JOHN NIMAN ESQ.

On June 26, 2018, the U.S. Government Accountability Office (GAO) prepared a statement entitled “ARTIFICIAL INTELLIGENCE: Emerging Opportunities, Challenges, and Implications for Policy and Research.”¹ This statement summarized an assessment drafted by the GAO for several subcommittees of the U.S. House of Representatives. This assessment indicates that lawmakers are, at least to some degree, taking an interest in artificial intelligence (AI). Presumably, this interest will lead to additional regulation or lawmaking. As laws concerning AI are drafted, attorneys must familiarize themselves not only with the text of the statutes and policies, but also with the underlying integration of AI into society. This broader understanding will serve to assist attorneys in advocating for their clients, whether by directly counseling clients on the legal issues surrounding the use of AI, or by recognizing issues caused by AI that affect their clients’ cases. In that spirit, I present a brief, woefully incomplete, survey of AI applications in fields upon which the law does, or will likely, touch.

A necessary first question is, “What constitutes artificial intelligence?” As the GAO statement indicates, there is no single definition of AI, but broadly, the term indicates computer programming capable of functioning near, at or above human capacity. AI is further distinguished into two general categories: *general* artificial intelligence and *narrow* artificial intelligence. General AI refers to computers and programming broadly capable of human intelligence, or capable of exceeding human intelligence, in a wide variety of tasks. While this level of AI does not currently exist, pop culture examples include Commander Data from “Star Trek: The Next Generation” and the robots depicted in “Westworld.” If general AI is possible at all, speculation as to when such systems might first appear varies from mere decades to centuries. While general AI could have a massive impact upon both law and society more broadly, it is unlikely to have any effect in the near future. Narrow AI, meanwhile, refers to computers and



from the issuer's account and deposit it into the customer's account. Banks also use AI to review customers' accounts and notify them and the bank to suspicious transactions, or to issue notifications to a customer when specific events occur. Financial advisors can leverage AI to provide their customers with estimates on how making specific changes (like taking out a loan or moving to another state) might affect them financially. These programs can also monitor a client's financial transactions daily and provide targeted recommendations to help users reach a specific goal.

In healthcare, artificial intelligence assists researchers and doctors in a wide range of areas.

IBM's artificial intelligence system Watson is assisting oncologists in tumor detection

programming capable of functioning at approximately human levels of intelligence in a single, or in relatively few, arena(s). All of the examples within this article are applications of narrow AI.

One feature of artificial intelligence is its capacity to process large amounts of information quickly and accurately. For instance, **AI is capable of parsing many hours of video to identify relevant segments that can then be reviewed by a human being.**² **Prosecutors and defense attorneys who watch hours of body camera or surveillance footage, the vast majority of which is irrelevant to their case, might appreciate a system that presents only the relevant portions for their review.** However, AI can

do more than simply process footage for review. AI is likewise capable of reviewing live footage for events or individuals of interest in real time.³ In this capacity, such programs can identify and alert police or employers to crimes or misconduct taking place and perhaps recognize the people involved. Facial recognition and identification technology is capable of searching voluminous databases of known individuals to search for a match, similarly to how fingerprints collected at a scene can be run through local or national databases for potential matches.

Major financial institutions are also leveraging artificial intelligence to enhance their businesses. Most of us are familiar with mobile check deposit systems, in which a person takes a picture of a check, usually with their cellphone, and electronically presents that check for deposit to their bank. Sophisticated systems on the bank's end then review those pictures, identify bank account numbers, draw money

for breast cancer.⁴ Moreover, Watson can review and digest vast quantities of medical research and journal articles to provide suggestions to physicians when diagnosing a patient. According to IBM, Watson's suggestions match those of oncologists more than 80 percent of the time. Elsewhere, AI is being developed to detect illnesses identified from a patient's breath.⁵ While this has been possible for some time, the vast quantity of data that has to be processed to diagnose a patient in this way was too burdensome for general application. Using AI, what once took hours or days now takes only minutes. Therefore, diagnosing a patient using such systems may lead to improved patient outcomes.

Watson is also being used by researchers to help discover new treatments and even to generate new hypotheses for testing.⁶ By processing massive amounts of genetic information from patients suffering from specific diseases, Watson is capable of identifying hidden links between

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patients or commonalities that might indicate the presence or function of the disease. These links can then be further researched to develop therapies or cures. Coupled with Watson's ability to understand medical literature, Watson can then suggest potential paths for that research. In the near future, this data may even lead to personalized treatment based on a specific patient's condition, including the impact another illness, or the patient's own biology, might have on what would otherwise be a generic treatment path.

Alongside the potential artificial intelligence presents come yet-untested legal questions. Can an AI coupled with facial recognition identify a suspect sufficiently to be introduced into court, and to what extent could such identification be tested? Ironically, there is little question that a human being can recognize a person, but identification via AI will likely be contested far more strongly, even if such a system is capable of far more accurate identifications. To what extent might identification via AI violate a defendant's rights under the Confrontation Clause? Who would a defendant even confront when no human participated in their identification? In the civil context, to what extent might a financial advisor or physician be considered negligent for relying on an artificial intelligence system when rendering a professional opinion? Conversely, were AI broadly adopted, might a professional be considered negligent for *not* consulting such a system? Does a physician commit malpractice by relying on a suggestion Watson makes that doesn't

pan out or, worse, is incorrect based on a flaw within Watson itself?

For now, these questions are being punted down the line. Facial identification and

recognition technology is merely presenting possible matches for human review, not itself asserting that a photograph or video subject is a certain individual. Accordingly, facial recognition is a tool, but not itself admissible evidence. Financial alerts related to fraud continue to be reviewed by human financial professionals. Watson's diagnoses and research suggestions continue to be reviewed by doctors and researchers. Ultimate decision-making authority remains vested in people, whom the law is already comfortable holding accountable if those decisions turn out to be incorrect. While the technology remains in its (relative) infancy, this kind of human oversight is both necessary and wise.

Whatever the potential for this technology, real-world variables will no doubt impact its efficacy. For instance, the accuracy of facial recognition technology depends heavily upon a variety of factors, including the database from which the program is comparing photos, the lighting conditions and angles from which photos for comparison are taken, and the resolution at which photos or videos for comparison are captured. Medical diagnoses are limited by the database of medical information available, including patient information and research, held by many different organizations. However, **as the technology itself matures, and the supporting ecosystems providing information for comparison and processing improves, it seems increasingly likely that human review will become less of a practical necessity, even if it remains a requirement by policy.**

Reports like those presented by the GAO demonstrate that lawmakers are beginning to consider these sorts of questions. This interest is being encouraged by corporations creating artificially intelligent systems, including major players like Microsoft. Yet, given the scope with which artificial intelligence is already being integrated into diverse fields within society, it seems unlikely that any regulations will keep pace with future developments. The onus, therefore, will be on attorneys representing clients where these issues affect their cases to educate both jurors and the courts. This can only be done if the attorneys themselves understand, or can at least spot, these issues and the technology underlying them. Before long, we may need an artificial intelligence of our own to keep track of all the developments. **NL**

1. <https://www.gao.gov/assets/700/692793.pdf>.
2. See e.g.: <https://www.policeone.com/police-products/body-cameras/articles/476484006-How-AI-will-transform-digital-evidence-management/>.
3. <https://abcnews.go.com/Technology/wireStory/ai-surveillance-56340998>.
4. <https://www.ibm.com/watson/health/oncology-and-genomics/oncology/>.
5. <https://www.smithsonianmag.com/innovation/artificial-intelligence-may-be-able-to-smell-illnesses-in-human-breath-180969286/>.
6. <https://www.ibm.com/us-en/marketplace/ibm-watson-for-drug-discovery>.



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