ARTIFICIAL INTELLIGENCE AND THE ETHICAL PRACTICE OF LAW: KEEPING YOUR HANDS ON THE WHEEL

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State Bar of Texas
7TH ANNUAL ADVANCED TRIAL STRATEGIES
February 15-16, 2018
New Orleans

CHAPTER 7

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- Chair of the Board of Directors of the State Bar of Texas (2015-2016); Executive Committee (2013-2017);
- President, Texas Chapters of American Board of Trial Advocates 2015 (Tex-ABOTA) and chair of its Legislative Committee; (2012–Present);
- President, Austin Bar Association (elected 2011-2012) (Named the Outstanding Local Bar Association, 2011-12, by the State Bar of Texas; Received the Luminary Award 2011-2012 for Excellence in Communication from the National Association of Bar Executives;
- Chair, Board of Trustees, State Bar of Texas Insurance Trust (2014-2015);
- National Director, Board of Directors, DRI (the largest association of defense trial attorneys in North America and Europe) (2009-2012);
- Chair, Austin Bar Foundation (2012-2013)(Charitable arm of the Austin Bar)
- President, Texas Association of Defense Counsel, 2004-2005 (President-Elect, 2003-2004; Executive Vice-President, 2002-2003; Secretary-Treasurer 2000-2001; Founder's Award, 2009; President's Award, 1991 and 1999); Program Chair, 2015 and 2011 Annual Meetings; Program Chair, 2013 Summer Meeting;
- 2014 Recipient of the "Standing Ovation" Award from the State Bar of Texas for serving as course director or speaker on over 30 legal education courses in the last 15 years.
- President, American Board of Trial Advocates; Austin Chapter (present);
- DRI (named Outstanding Defense Bar Leader in the nation in 2006; State Leadership Award, 2009; Exceptional Performance Award, 2005; Chair, Public Service Committee, 2010-11; National Membership Committee, 2007 to 2009; Texas State Representative, 2006-2009; Regional Marketing Chair (2006-2009);
- Fellow, Foundation of the American Board of Trial Advocates

- President's Citation for Exemplary Service, 2014 State Bar of Texas;
- Member, Supreme Court of Texas Expedited Actions Task Force (2011-2012);
- Chair, TEX-ABOTA/TTLA/TADC HB 274 Working Group on New Civil Procedure Rules (2011);
- Chair, Legislative Committee, Austin Bar Association (2008 to 2013);
- President, Austin Young Lawyers Association (1987-1988);
- Board of Directors, Texas Civil Justice League, (2004-2011);
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- International Society of Barristers;
- Board of Directors, Austin Bar Association (1987-1988);
- Association of Defense Trial Attorneys;
- Federation of Defense and Corporate Counsel;
- Bar Association of the Fifth Circuit;
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Admissions:

State Bar of Texas; Fifth Circuit Court of Appeals; All U.S. District Courts: Northern, Eastern, Southern and Western Districts of Texas.

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- Texas Legislative Update (State Bar Advanced Personal Injury Course, 2017, 2016, 2015, 2012, 2011, 2009, 2008, 2007, 2006; State Bar of Texas-Litigation Section, 2017, 2013, 2012; State Bar of Texas-Damages in Civil Litigation, 2015, 2013, 2012; State Bar of Texas-Advanced Civil Trial Law Course, 2013, 2012; University of Texas-Page Keeton Civil Litigation Conference 2017, 2015, 2012; State Bar of Texas-Business Torts, 2015, 2013, 2012, 2011; TEX-ABOTA, 2016, 2015, 2014, 2013, 2012, 2011; Texas Association of Defense Counsel, 2015, 2013, 2012, 2011, 2010, 2009; and Austin Bar Association, 2017, 2014, 2013, 2012, 2011, 2010, 2009 and 2007, and State Bar College, 2017, 2015, 2005);
- *Net Worth – Discoverability and Admissibility*, (State Bar of Texas, 2016);
- *Artificial Intelligence and the Ethical Practice of Law*, Advanced Trial Strategies (State Bar of Texas, 2018)
- *Civility Oath*, Advanced Trial Strategies, (State Bar of Texas, 2016);
- Expedited Actions (State Bar, 2012, 2013)(Texas Association of Defense Counsel, 2014);
- Proposed New Disciplinary Rules of Professional Conduct (State Bar Advanced Personal Injury Course, 2010; Texas Association of Defense Counsel, 2010);
- Litigation Update, State Bar of Texas, 2016;
- Article, *Texas Chancery Courts*, Texas Bar Journal, Feb. 2016;
- Article, *A Level Playing Field with No Wind,* Voir Dire, the Journal of the American Board of Trial Advocates, January 2012
- Ethical Considerations in Business Litigation (State Bar of Texas Business Torts Law Course, 2009); (Texas Association of Defense Counsel, 2010).
- *"Paid or Incurred" How it works at Trial* (2009 Austin Bar Association Bench-Bar Annual Conference);
- Judicial Tort Reform (State Bar Advanced Personal Injury Course, 2008);
- Feature Article, *The American Jury: The Best Alternative Dispute Resolution,* For The Defense (DRI, The Magazine of Defense, Insurance and Corporate Counsel, June 2008);

- Attorney Ethics (State Bar Advanced Personal Injury Law Course, 2008);
- Insurance Coverage Update (State Bar Advanced Insurance Law Course, 2007, 2008); (University of Houston, Advanced Insurance Law Course, 2008);
- *The State of Our Seventh Amendment*, Presented to the State Bar of Texas Annual Meeting (2007);
- Insurance Issues in Construction Defect Litigation (San Antonio 2007);
- Article, *Texas Legislative Update*, Texas Bar Journal, State Bar of Texas, January, 2007;
- Tort Trends (Texas Causes of Action, State Bar of Texas, 2006);
- Texas Tort Reform (2003 & 2004);
- *Trying Tough Cases in Tough Venues* (Texas Association of Defense Counsel, 2004);
- Mold Litigation (2002);
- Daubert Overview (State Bar, Advanced Civil Law Trial Course, 2000);
- Texas Summary Judgments (Rutter Group, 1997);
- Chapter, Government Liability (1998);
- Insurance Coverage of Employment Claims (Austin Bar Association, 1997);
- Editor in Chief -*Texas Update* (2002 to present).

Education:

- University of Texas at Arlington (B.A., 1975)
- St. Mary's University of San Antonio (J.D., with honors, 1978)
- Note and Comment Editor, St. Mary's Law Journal, 1977-1978
- Phi Delta Phi (Vice President, 1978; Outstanding Law Graduate, 1978)
- Harlan Honor Society.

Other: Briefing Attorney to Associate Justice Sears McGee, Texas Supreme Court, 1978-1979.

- Recognized, Best Lawyers in America, 2012 - 2018.
- Recognized as Texas Super Lawyer for fourteen straight years (2004-2018) in Texas Monthly Magazine and National Super Lawyer-Corporate Edition for ten straight years (2008-2018).
- AV-Rated (highest peer review rating) by Martindale Hubbell for over 25 years and listed in Best's Directory of Recommended Attorneys and Martindale Hubbell's Bar Registry of Preeminent Lawyers.

- 2012 GO-TO Litigation LAW FIRM for the Top 500 Companies, American Financial Group
- Texas Top Law Firms, listed in 2012-18 by ALM and Law.com

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ARTIFICIAL INTELLIGENCE AND THE ETHICAL PRACTICE OF LAW: KEEPING YOUR HANDS ON THE WHEEL

Although computerized assistance makes legal practice easier and more sophisticated, artificial intelligence can process information more powerfully and with impressive accuracy, and the benefits artificial intelligence brings to the practice of law continues to grow exponentially as technology advances, attorneys should not make the mistake of blindly relying upon such automation. Instead, attorneys need to understand how the technology they employ works and monitor the work generated by that technology or risk malpractice.

I. ARTIFICIAL INTELLIGENCE IN OUR EVERYDAY LIVES

There is a lot of hype and misunderstanding surrounding artificial intelligence (often shortened to "AI"). Usually when people think of artificial intelligence, they think of android servants from science-fiction or cold, calculating robotic would-be overlords, such as the eponymous beings from the *Terminator* and *Matrix* franchises. People often imagine artificial intelligence to be a yet-attained fantastic, futuristic technology. However, artificial intelligence is already here and even many lawyers already use it to some degree in their practice.

Artificial intelligence already permeates our daily lives: facial recognition in photos on social media, smartphones understanding spoken-word commands, language translation applications, search engines, targeted advertisements, self-driving cars, automated cleaning robots like Roomba, the "bots" video gamers battle, autocorrect, spell check, commercial and military drones, guided missiles, and more. We use apps like Uber and Lyft to hail rides and they don't even own any cars; we use apps like HomeAway and Airbnb to make lodging arrangements and they don't even own any hotels; many people now prepare their taxes or calculate payroll using tax preparation or bookkeeping software. In other words, we already have robotic servants at our disposal.

Various tools of artificial intelligence are also being widely deployed in homeland security, speech and text recognition, data mining, and e-mail spam filtering.[1] Applications are also being developed for gesture recognition (understanding of sign language by machines), individual voice recognition, global voice recognition (from a variety of people in a noisy room), and facial expression recognition for interpretation of emotion and non-verbal cues.[2] Other applications are robot navigation, obstacle avoidance, and object recognition.[3]

Artificial intelligence is defined as "a branch of computer science dealing with the simulation of intelligent behavior in computers" or "the capability of a machine to imitate intelligent human behavior."[4] Artificial intelligence ("AI") is a term that generally refers to computers performing mental tasks traditionally performed by humans. Computer programs are developed by software engineers, but those that are "artificially intelligent" are represented to have the capacity to process information, then create new programs independently based on the information processed. This is also called cognitive computing. But there are distinctions between so-called "hard" and "soft" artificial intelligence.

"Hard" artificial intelligence involves computers that actually reason in a way similar to humans. This is the kind of artificial intelligence displayed in Stanley Kubrick's forward-thinking motion picture *2001: A Space Odyssey*, which of course raised the specter of a human-like computer that develops mental illness and becomes homicidal ("I'm sorry, Dave. I'm afraid I can't do that." – HAL 9000).[5] This distrust of artificial intelligence developing human-like consciousness has permeated popular culture: the self-aware Skynet that commands the robots of the *Terminator* series to eradicate the human race, the virtual reality and robotic overlords in the *Matrix* franchise, Data and the Borg in *Star Trek*, Ultron in the Marvel Universe, the *Westworld* television series, the *Blade Runner* franchise, and *Doctor Who*, which has introduced an assortment of self-aware robots, both benevolent and malicious.

Both this kind of AI and the specter of deviant behavior remain in the domain of futurists at this time, as AI software that truly reasons the way a human reasons does not appear to be commercially available, if it even exists. On the other hand, "soft" artificial intelligence, which enables computers to perform human tasks, but faster, is on the horizon if it has not already arrived. However, the extent of its functionality, as well as its market penetration, remains to be seen.

Exceeding common human brain power is nothing new. Calculators do that. And some researchers have commented that when artificial intelligence functions become common, they are no longer considered

[1] *Applications of artificial intelligence*, WIKIPEDIA, https://en.wikipedia.org/wiki/Applications_of_artificial_intelligence (last visited Sep. 22, 2017).
[2] *Id*.
[3] *Id*.
[4] Merriam-Webster, *Artificial Intelligence*, available at https://www.merriam-webster.com/dictionary/artificial%20intelligence (last visited Sept. 22, 2017).
[5] 2001: A SPACE ODYSSEY (Metro-Goldwyn-Mayer 1968). HAL is short for "heuristic algorithm."

intelligent, or even artificially intelligent.[6] Again, there is a leap from common algorithms used in, for example, our cell phones, to "hard" artificial intelligence, which involves the ability of the algorithm to reason automatically, including propagating its own algorithms.[7]

Put another way, such artificial intelligence is the program's ability to improve its performance with use, or "experience." Some refer to such artificial intelligence as "machine learning."[8] Machine learning and data mining often employ the same methods and overlap significantly.[9] They can be roughly distinguished as follows: machine learning focuses on prediction, based on known properties learned from the training data, while data mining focuses on the discovery of (previously) unknown properties in the data.[10]

Machine learning has been characterized as being a method of data analysis that automates analytical model building.[11] Using algorithms that iteratively learn from data, machine learning reportedly allows computers to find hidden insights without being explicitly programmed where to look.[12] An algorithm may be considered as a step-by-step set of operations to be performed, or a type of formula.[13] As models are exposed to new data, they are able to independently adapt.[14] The purpose is for the model to learn from previous computations to produce reliable, repeatable results.[15]

While we don't yet have robot overlords or cybernetic sidekicks, artificial intelligence already exists that can outsmart and out-perform humans. For instance, there is Watson, the IBM technology famous for winning Jeopardy in 2011.[16] Reportedly, Watson was an advance from prior systems because its design enabled it to understand natural language, including denotative and connotative meanings of words, and its "vocabulary" expanded with use.[17] Unlike Deep Blue, a prior program that excelled at chess—a game of "complete information based entirely on math with finite possibilities," Watson displayed the capacity to answer open-ended questions involving natural language.[18] Artificial intelligence can teach itself and train against itself, becoming smarter than it would be simply observing human behavior.[19]

Artificial intelligence even dominates gaming. Using the same self-training learning abilities, from poker to massively multiplayer online strategy games, artificial intelligence can crush even the most skilled professional champions by first training against itself and then predicting human behavior.[20] The rate at which artificial intelligence can learn is astounding: "It only took the bot two weeks to go from laughable novice to world-class competitor"—something that takes a human player months to years of training to achieve.[21]

Currently, there are certain human traits that artificial intelligence has not been able to learn—namely, empathy and appropriate social behavior.[22] But even this is only a matter of time, because it's merely a

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[6] *Applications of artificial intelligence*, WIKIPEDIA, *supra*.
[7] *Automated reasoning*, WIKIPEDIA, https://en.wikipedia.org/wiki/Automated_reasoning (last visited Sep. 22, 2017).
[8] *Machine learning*, Wikipedia, https://en.wikipedia.org/wiki/Machine_learning (last visited Sep. 22, 2017).
[9] *Id*.
[10] *Id*.
[11] *Machine Learning: What it is & why it matters*, SAS, https://www.sas.com/it_it/insights/analytics/machine-learning.html (last visited Sep. 22, 2017).
[12] *Id.*
[13] *Algorithm*, WIKIPEDIA, https://en.wikipedia.org/wiki/Algorithm (last visited Sep. 22, 2017).
[14] *Machine Learning: What it is & why it matters*, SAS, *supra*.
[15] *Id.*
[16] Julie Sobowale, *How artificial intelligence is transforming the legal profession*, ABA JOURNAL, April 2016, http://www.abajournal.com/magazine/article/how_artificial_intelligence_is_transforming_the_legal_profession.
[17] Legal Talk Network, *How Artificial Intelligence Will Influence the Future of Legal Practice*, May 3, 2016, http://legaltalknetwork.com/podcasts/law-technology-now/2016/05/artificial-intelligence-will-influence-future-legal.
[18] *Id.*
[19] Cade Metz, *Google's Dueling Neural Networks Spar to Get Smarter, No Humans Required*, WIRED, April 11, 2017, https://wired.com/2017/04/googles-dueling-neural-networks-spar-get-smarter-no-humans-required/.
[20] Allison Cavin, *13 Things You Need to Know About How Artificial Intelligence Totally Dominates Poker*, https://www.indeed.com/prime/resources/talent/13-things-you-need-to-know-about-how-artificial-intelligence-dominates-poker (last visited Sept. 22, 2017); Peter Holley, *'It knew what you were going to do next': AI learns from pro gamers — then crushes them*, THE WASHINGTON POST, Aug. 15, 2017, *available at* https://www.washingtonpost.com/news/ innovations/wp/2017/08/15/it-knew-what-you-were-going-to-do-next-ai-learns-from-pro-gamers-then-crushes-them/.
[21] *Id.*
[22] *See, e.g.*, Gail Fashingbauer Cooper, *This is why AI shouldn't design inspirational posters*, CNET, June 28, 2017, https://www.cnet.com/news/ai-inspirational-posters-motivational-posters-artificial-intelligence-inspirobot; Matt Burgess, *Just like humans, artificial intelligence can be sexist and racist*, WIRED, April 13, 2017, http://www.wired.co.uk/article/machine-learning-bias-prejudice; Rob Price, *Microsoft is deleting its AI chatbot's incredibly racist tweets*, BUSINESS INSIDER, Mar. 24, 2016, http://www.businessinsider.com/microsoft-deletes-racist-genocidal-tweets-from-ai-chatbot-tay-2016-3.

limitation on what humans can teach artificial intelligence to understand.[23]

However, given artificial intelligence's rapid ability to learn and surpass human performance in many ways, many commentators express a growing concern of humans being replaced by technology and large swaths of the population being rendered destitute. Automation is already replacing certain job functions in many industries: manufacturing, agriculture, travel agents, finance,[24] and military,[25] to name a few. Even certain roles of personal assistants and receptionists are being replaced by artificial intelligence.[26] Nor are only low-skill jobs at risk, as even learned professions, such as the practice of medicine, are finding themselves slowly being automated through the development of artificial intelligence.[27]

II. ARTIFICIAL INTELLIGENCE USED IN THE PRACTICE OF LAW

In recent years, the media has made sensational claims that the advent of artificially intelligent programs soon would displace lawyers.[28] One large law firm attracted attention for purchasing a program that would do the work of fresh associates in a bankruptcy practice, handling preparation of routine forms and schedules.[29] While this seems little different from using software to prepare your tax returns, some proponents heralded the development as a harbinger of profound change in the legal profession, predicting the imminent arrival of robot lawyers.

One "AI lawyer," Ross, is a highly proprietary legal artificial intelligence technology built on the IBM Watson and its ability to learn and understand natural language.[30] Ross, however, is not alone, as other technologies have since been developed or are in the process of developing. Outside Counsel Insights, or "OCI," which relies on cloud-based cognitive computing to analyze billing, is also built from IBM's Watson technology.[31] Artificial intelligence "chatbots" have been used with much success to overturn parking fines,[32] assist refugees seeking asylum,[33] and even assist individuals whose personal data was compromised in the July 2017 Equifax security breach to file suit against the credit reporting agency in small claims court.[34] As the American Bar Association noted, "AI is the next

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[23] *See, e.g.*, Bartu Kaleagasi, *A New AI Can Write Music as Well as a Human Composer*, FUTURISM, March 9, 2017, https://futurism.com/a-new-ai-can-write-music-as-well-as-a-human-composer/; Cade Metz, *Google's AI Invents Sounds Humans Have Never Heard Before*, WIRED, May 15, 2017, https://www.wired.com/2017/05/google-uses-ai-create-1000s-new-musical-instruments/; Jason Daley, *AI Produces New Styles of Art*, SMITHSONIAN MAGAZINE, July 3, 2017, *available at* http://www.smithsonianmag.com/ smart-news/ai-system-produces-new-styles-art-180963912/.

[24] Nikhil Reddy, *Artificial Intelligence Might Overtake Medical and Financial Industries*, HUFFINGTON POST, Aug. 21, 2017, http://www.huffingtonpost.com/entry/artificial-intelligence-might-overtake-medical-and-finance-industries_us_599b201de4b0771ecb064fb6; Hugh Son, *JPMorgan Software Does in Seconds What Took Lawyers 360,000 Hours*, BLOOMBERG, Feb. 28, 2017, https://www.bloomberg.com/articles/2017-02-28/jpmorgan-marshal-an-army-of-developers-to-automate-high-finance.

[25] Drones and other remote-controlled and automated vehicles reduce risk of harm directed at human troops in the battlefield.

[26] Virtual assistants like Apple's Siri, Google's Google Assistant, Amazon's Alexa, and Microsoft's Cortana absorb tasks that were traditionally performed by human administrative assistants a decade ago, and automated virtual telephone response programs absorb tasks traditionally performed by receptionists, such as routing calls or taking messages and payments.

[27] Reddy, *Artificial Intelligence Might Overtake Medical and Financial Industries*, *supra*; *but see* Brian Fung, *Everything you think you know about AI is wrong*, WASHINGTON POST, Jun. 2, 2017, available at https://www.washingtonpost.com/news/the-switch/wp/2016/06/02/everything-you-think-you-know-about-ai-is-wrong/.

[28] *See, e.g.*, David Delahunty, *Must read article on how our lives will change dramatically in 20 years*, LINKEDIN, Jul. 16, 2017, https://www.linkedin.com/pulse/must-read-article-on-how-our-lives-change-dramatically-20-delahunty (claiming that there will be much as 90% fewer lawyers in the future).

[29] Debra Cassens Weiss, *In a first, a BigLaw firm announces it will use artificial intelligence in one of its practice areas*, ABA JOURNAL, May 9, 2016, http://www. abajournal.com/news/article/in_a_first_a_biglaw_firm_announces_it_will_use_artificial_intelligence_in_o/.

[30] Cecile De Jesus, *AI Lawyer 'Ross' Has Been Hired By Its First Official Law Firm*, FUTURISM, May 11, 2016, https://futurism.com/artificially-intelligent-lawyer-ross-hired-first-official-law-firm/.

[31] Jennifer Williams-Alvarez, *IBM Says New Watson Tool Could Dramatically Reduce Outside Counsel Spend*, CORPORATE COUNSEL, May 16, 2017, http://www.corpcounsel. com/id=1202786434937/IBM-Says-New-Watson-Tool-Could-Dramatically-Reduce-Outside-Counsel-Spend

[32] Elena Cresci, *Chatbot that overturned 160,000 parking fines now helping refugees claim asylum*, THE GUARDIAN, March 6, 2017, *available at* https://theguardian.com/ technology/2017/mar/06/chatbot-donotpay-refugees-claim-asylum-legal-aid.

[33] *Id.*; *see also* Janet Burns, *Chatbot Can Help You Sue Equifax For Up To $25K, Fight Parking Tickets*, FORBES, Sep. 15, 2017, https://www.forbes.com/sites/janetwburns/ 2017/09/15/chatbot-helps-users-fight-parking-tickets-sue-equifax-for-up-to-25k/.

[34] *Id.*

great hope that will revolutionize the legal profession."[35]

Obviously, those capabilities can be useful in a legal context. That has led some observers to wonder whether technological innovation will be an event of creative destruction that will destroy the legal profession, or at least its traditional structure, as more tasks performed by associate attorneys and paralegals are delegated to computer software.[36] Proponents of the technology emphasize that clients are demanding better value in terms of more service at less cost, a need that only the power of artificial intelligence can meet. At least one proprietor has suggested that the traditional pyramid model of law firms has or will soon become diamond-shaped.[37] Another commentator suggested that human lawyers should consider themselves irreplaceable only for the next ten or so years, as only 13% to 23% of lawyer time is currently automatable.[38] If that percentage changes significantly or the pace of AI adoption comes faster than anticipated, then the potential for technology disruption in the legal industry can be much larger.[39] There are also predictions that new roles will arise within the legal profession, notably in legal engineering—managing and developing artificial intelligence, writing algorithms.[40]

What is more likely with the advent of artificial intelligence in the practice of law is that most lawyers will be freed from the mundane task of data gathering for the value-added task of analyzing results, thinking, and advising their clients.[41] Brief writing and other persuasive writing, negotiating, and courtroom roles will still be left to human attorneys for at least the foreseeable future.[42] These are roles that will always require the human touch—for the time being. Artificial will largely serve as a tool to help lawyers do all of this better, faster, and more cost-efficiently.

A. Artificial intelligence is already used in private practice—and its applications are growing.

In reality, many lawyers are already using—or at least have available for use—"soft" artificial intelligence in legal research. We are accustomed to performing word or phrase searches either in common search engines or in proprietary legal research databases. The latter also offer "enhanced" results, netting additional materials that the familiar Boolean search method purportedly would not provide.[43] Advanced search technologies incorporating artificial intelligence continue to evolve, allowing users to search using natural language instead of keywords and Boolean logic, analyze context to identify and rank the most relevant results, and pinpoint specific relevant passages within very large documents.[44]

The primary value in these systems clearly is in raw computing power. The amount of legal data at our disposal is significantly larger than in the past and technology will be needed to parse this information, because there is more than any human can efficiently do.[45] In the United States alone, legal records include over 14 million case decisions, tens of millions of legislative documents and hundreds of millions of regulations—with millions more being added every month.[46] No one could rationally dispute that computer programs can "review" and search large quantities of data faster than any person or group of people could. This computational process of discovering patterns in large data sets involving methods at the intersection of artificial intelligence, machine learning, statistics, and database systems is commonly referred to as data mining. [47]

The actual data mining task is the automatic or semi-automatic analysis of large quantities of data to extract previously unknown, interesting patterns such as groups of data records (cluster analysis), unusual records (anomaly detection), and dependencies (association rule mining).[48] Many users of email and social media recognize (and often resent) data mining,

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[35] Sobowale, *How artificial intelligence is transforming the legal profession*, *supra*.
[36] *See, e.g.*, Ian Lopez, *But What About Lawyers? A Q&A With Richard Susskind on AI in Law*, LEGALTECH NEWS, Jul. 25, 2016, http://www.legaltechnews.com/id=1202763509782/But-What-About-Lawyers-A-QA-With-Richard-Susskind-on-AI-in-Law.
[37] Sobowale, *How artificial intelligence is transforming the legal profession*, *supra*.
[38] Sterling Miller, *Artificial Intelligence and Its Impact on Legal Technology (Part II)*, THOMSON REUTERS (2017), http://static.legalsolutions.thomsonreuters.com/static/pdf/S045388_2_Final.pdf.
[39] *Id.*
[40] *Id.*
[41] *Id.*
[42] *See* Steve Lohr, *A.I. Is Doing Legal Work. But It Won't Replace Lawyers, Yet.*, NEW YORK TIMES, Mar. 19, 2017, *available at* https://www.nytimes.com/2017/3/19/technology/lawyers-artificial-intelligence.html.
[43] Jeff Pfeifer, *Artificial Intelligence is Molding the Attorney of the Future*, LEXISNEXIS, Aug. 9, 2017, http://www.law.com/sites/almstaff/2017/08/09/artificial-intelligence-is-molding-the-attorney-of-the-future.
[44] *Id.*
[45] *Id.*
[46] *Id.*
[47] *Data mining*, WIKIPEDIA, https://en.wikipedia.org/wiki/Data_mining (last visited Sep. 22, 2017).
[48] *Machine learning*, WIKIPEDIA, https://en.wikipedia.org/wiki/Machine_learning (last visited Sep. 22, 2017).

but it appears that the same or similar programs are employed to extract patterns or specific pieces of information from copious data collections, including programs with legal applications.

Legal concepts typically are expressed in words. Concepts also can be expressed as algorithms, which increasingly influence our daily lives, but most attorneys do not directly employ—and some do not even understand—algorithms. The developing software uses algorithms to analyze unstructured data, but the output still must appear as words, at least in the near term. While some foresee developing software as causing "a paradigm shift in how legal work is done," others believe change will be incremental, and the effect will be to enhance the profession's ability to serve its clients rather than to replace the professionals altogether.[49]

Lawyers already use data mining. Predictive coding, for instance, is employed in electronic discovery to sift efficiently through large amounts of data based on keyword searches and algorithms.[50] It is often guided by attorney-set instructions and parameters.[51] The artificial intelligence learns not only from initial attorney instructions, but the attorneys' own coding patterns, to help it understand nuance and context.[52] Several commercially available proprietary platforms already exist.

This technology can even be used beyond discovery itself, such as to assist in litigation planning.[53] For instance, there is e-discovery technology that can, through sophisticated pattern recognition, identify and point attorneys to key documents that may have been overlooked by human reviewers.[54] Artificial intelligence is also already being used to analyze data, such as billions of lines of business transactions to determine patterns for possible securities fraud.[55] There is an expectation that, in the future, attorneys will be able to provide large amounts of data and use it to tell better stories for litigation.[56]

Artificial intelligence that can mine data and quickly identify behavior patterns like specific judges, opposing parties, lawyers, and legal teams also exists, although it is currently in development and not available to the public.[57] Attorneys and insurance carriers would be able to use it to predict factors like probable time to resolution and then budget accordingly.[58] In testing, this technology has shown a 70 percent accuracy in predicting 7,700 rulings over the span of 60 years of data.[59] It is able to achieve this level of success through sophisticated pattern recognition that would be difficult and time-expensive for humans to complete.[60]

Less certain is the extent to which the programs actually can recognize concepts, or even read anomalies in the material. For example, documents scanned and converted into portable document format (Adobe PDF) materials with content made "readable" by optical character recognition, may contain errors and anomalies that the software cannot read. Moreover, concept-recognition itself involves the frequency of the incidence of co-related terms, and in that sense at least appears to remain word-based. This can lead to problems for the attorney who relies too heavily on these technologies, as sensitive information not recognized by the artificial intelligence may be inadvertently released or documents critical to building a case in litigation are overlooked.

Lawyers also use artificial intelligence for document assembly. Many commercial proprietary technologies exist that assist in the creation of forms, contracts, pleadings, estate planning documents, and other legal documents. Standard forms allow firms to be more productive and they save money for clients.[61] While form-building services are also available to laypeople, they do come with risks: without knowledge of the law, they may not use those documents correctly.[62]

B. Artificial intelligence is already used by the judiciary and in dispute resolution.

But it's not just litigators taking advantage of artificial intelligence: judges and mediators also use it. For instance, some jurisdictions in the United States use artificial intelligence to determine sentencing in

[49] Sobowale, *How artificial intelligence is transforming the legal profession*, *supra*.
[50] Ralph C. Losey, *A Survey of Emerging Issues in Electronic Discovery: Predictive Coding and the Proportionality Doctrine: A Marriage Made in Big Data*, 26 REGENT UNIV. U.L. REV. 7, 21-24 (2013-2014).
[51] *Id.*
[52] *Id.* at 21.
[53] David Lat, *How Artificial Intelligence Will Revolutionize eDiscovery*, ABOVE THE LAW, Jan. 25, 2017, http://abovethelaw.com/2017/01/how-artificial-intelligence-will-revolutionize-ediscovery/.
[54] *Id.*
[55] Sobowale, *How artificial intelligence is transforming the legal profession*, *supra*.
[56] *Id.*
[57] Jeff Pfeifer, *Artificial Intelligence is Molding the Attorney of the Future*, *supra*.
[58] *Id.*
[59] Sobowale, *How artificial intelligence is transforming the legal profession*, *supra*.
[60] *Id.*; *see also* Lucille A. Jewel, *The Indie Lawyer of the Future: How New Technology, Cultural Trends, and Market Forces Can Transform the Solo Practice of Law*, 17 SMU SCI. & TECH. L. REV. 325 (2014).
[61] Jewel, *The Indie Lawyer of the Future: How New Technology, Cultural Trends, and Market Forces Can Transform the Solo Practice of Law*, *supra*.
[62] *Id.*

criminal cases.[63] One jurisdiction that employs this is New Jersey. The idea is to assist judges in being more objective, reduce implicit human bias, and increase access to justice by reducing the costs associated with complicated manual bail assessments. Some commentators, however, raise ethical questions over bias in the humans who code the algorithms, which then leads to the artificial intelligence thereby replicating the very implicit human bias the courts intended to eliminate.[64] The concern critics raise is that bias therefore becomes even more difficult, though not impossible.[65]

Australia is currently testing a dispute resolution process for certain family law cases based in artificial intelligence technology.[66] Australian officials aim to "deliver low-cost, user-friendly legal assistance to help separating couples identify their differences and work through them" and estimate that "20% of all family law disputes in Australia could, in the future, be resolved through online dispute resolution. This technology would save thousands of hours of court time."[67] Their goal is to assist litigants who could not afford attorneys but also do not qualify for legal aid, and the only court time those using the service would see would be when the Australian Family Court ratifies the settlement agreement at the end.[68]

III. THE BENEFITS TO LAWYERS AND CLIENTS

Some observers have commented on the marketing aspect of artificial intelligence. At a 2016 Vanderbilt Law School conference about artificial intelligence, one expert, who holds a PhD in computer science, estimated that "we're currently experiencing the second or third wave of A.I. hype," in which everyone uses the term to describe their technology.[69] Referring to "predictive coding" as the "flavor of the day," the speaker nevertheless stated that "there have been real advances in machine learning" and that algorithms can "reduce the number of documents that lawyers must review" and "probably [do] reduce the cost of a project."[70]

A target market for some of these services appears to be companies subject to regulatory or law enforcement with respect to claims that may result or be in litigation, to predict and prevent occurrences and to investigate what conduct led to an occurrence that may be the basis for a claim or a charge. Software offering predictive analytics would reduce risk on the front end for enterprises employing it, resulting in reduced litigation expenses and limiting exposure to adverse legal outcomes.[71] And, as mentioned earlier, it can also eventually be of use for insurance carriers to determine with reasonable accuracy how much a particular case might cost and use it in making more efficient determinations as to settlement offers.[72]

Similarly, such software reportedly may enable law enforcement or regulatory authorities to review massive amounts of content, recognize concepts, identify patterns of conduct, and assemble data consisting of concentrated information relevant to the issue, such as, for example, trade secret theft, or insider trading, and to the collate data for use in the prosecution or defense of charges, or litigation.[73]

Just as common examples of artificial intelligence include spell-check, self-driving cars, recommendation offers from online retailers and other targeted advertising, scheduling and handling calls, and so many other uses assist humans in their day-to-day tasks, artificial intelligence has already found a practical place within the field of law. Of course, whether these

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[63] *Resolution 7: In Support of the Guiding Principles on Using Risk and Needs Assessment Information in the Sentencing Process*, NATIONAL CENTER FOR STATE COURTS (NCSC), CONFERENCE OF CHIEF JUSTICES AND CONFERENCE OF STATE COURT ADMINISTRATORS, Aug/ 3, 2011, http://www.ncsc.org/~/media/Microsites/Files/CSI/Resolution-7.ashx.

[64] *See* Julia Angwin, Jeff Larson, Surya Mattu and Lauren Kirchner, *Machine Bias*, PROPUBLICA, May 23, 2016, https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing; Ziyaad Bhorat, *Do we still need human judges in the age of Artificial Intelligence?*, TRANSFORMATION, Aug. 9, 2017, https://www.opendemocracy.net/transformation/ziyaad-bhorat/do-we-still-need-human-judges-in-age-of-artificial-intelligence; *but see* Sam Corbett-Davies, Emma Pierson, and Sharad Goel, *A computer program used for bail and sentencing decisions was labeled biased against blacks. It's actually not that clear.*, WASHINGTON POST, Oct. 17, 2016, *available at* https://www.washingtonpost.com/news/monkey-cage/wp/2016/10/17/can-an-algorithm-be-racist-our-analysis-is-more-cautious-than-propublicas/.

[65] *See* Angwin et al, *Machine Bias*, *supra*; Bhorat, *Do we still need human judges in the age of Artificial Intelligence?*, *supra*.

[66] *E-Divorce: How artificial intelligence could help Australian couples break up quickly and cheaply*, BUSINESS INSIDER AUSTRALIA, Aug. 9, 2017, http://www.businessinsider.com/e-divorce-how-artificial-intelligence-could-help-australian-couples-break-up-quickly-and-cheaply-2017-8.

[67] *Id.*

[68] *Id.*

[69] Gabe Friedman, *Artificial Intelligence: Marketing Buzzword, or Reality?*, Big Law Business, BLOOMBERG, Apr. 15, 2016, https://biglawbusiness.com/artificial-intelligence-marketing-buzzword-or-reality/.

[70] *Id.*

[71] *Id.*

[72] *See* Jeff Pfeifer, *Artificial Intelligence is Molding the Attorney of the Future*, *supra*.

[73] Friedman, *Artificial Intelligence: Marketing Buzzword, or Reality?*, *supra*.

applications actually produce results that are beneficial to the end-user is another matter, and the same is true of legal programs that employ software of this type.

IV. ETHICAL CONSIDERATIONS

Some may wonder—how are we going to rely on "AI lawyers" when we can't rely on spell check? After all, artificial intelligence can and does make mistakes, and not all mistakes are as benign as spell-check turning an innocuous sentence into a social faux pas. Some errors have dire consequences. For instance, car computers can still be hacked and hijacked remotely[74] and self-driving cars can still miscalculate and crash.[75]

But many lawyers already rely on artificial intelligence and more will come to rely on form-based or online legal services, research services, or other computerized tools when an algorithm can process data with far greater speed and efficiency and much less expense than a person could, even if a person were available to assist. Most often, no one is, because there is little economic incentive. Computer technology makes it possible, and economies of scale make to feasible, to provide such services in relatively simple matters that don't require legal reasoning.

This may apply, for example, to simple divorces, minor dispute resolution, preparing simple wills and small corporations, among many other legal needs—even fixing traffic tickets. Notably, however, all such programs are subject to the "GIGO" rule—garbage in equals garbage out.

Just because artificial intelligence can do things more efficiently than a human does not mean that it should conduct such tasks *without* humans. Art and media created by computers, for instance, can lead to embarrassing—or downright reprehensible—results without human review.[76] And a human in a self-driving car should still keep his or her hands on the wheel.[77] In fact, artificial intelligence can even do things that are illegal and create a legal nightmare for the humans responsible for it.[78]

A. Lawyers must keep their hands on the wheel.

Similarly, it will remain necessary for a human monitor to keep his or her hands on the wheel—to verify the data being scanned and for a human witness to lay the predicate for its admissibility in a proceeding subject to traditional rules of evidence. That person should be a trained, licensed attorney.

The availability of the technology raises ethical questions, one of which one attorney, Wendy Wen Yun Chang, identifies as "the danger of a failure of competence."[79] As to lawyers, she explains that "in using technology, lawyers must understand the technology that they are using, to assure themselves they are doing so in a way that complies with their ethical obligations — and that the advice the client receives is the result of the lawyer's independent judgment."[80]

Chang goes on to explain that lawyers must not "abdicate responsibility" or "blindly trust the technology."[81] While the technology may appear competent, its "inner workings are invisible to the naked eye."[82] Even assuming the user feeds the correct information into the computer, he or she must still intrinsically trust that the computer is doing what it says it is doing.[83] A lawyer is ethically required not to blindly accept the answer, and is "trained to perhaps spot mistakes."[84]

Just like with the self-driving car or the particularities of spell-checking applications, attorneys must understand how the technology they are using operates and must maintain constant vigilance to avoid costly errors. Complacency could cause irreparable damage to both the attorney's client and career.

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[74] Jeff Goodell, *Inside the Artificial Intelligence Revolution: A Special Report, Pt. 2*, ROLLING STONE, Mar. 9, 2016, http://www.rollingstone.com/culture/features/ inside-the-artificial-intelligence-revolution-a-special-report-pt-2-20160309; Andy Greenberg, *The Jeep Hackers Are Back To Prove Car Hacking Can Get Much Worse*, WIRED, Aug. 1, 2016, https://www.wired.com/2016/08/jeep-hackers-return-high-speed-steering-acceleration-hacks/.

[75] Bill Vlasic, *Self-Driving Tesla Was Involved in Fatal Crash, U.S. Says*, NEW YORK TIMES, Jun. 30, 2016, *available at* https://www.nytimes.com/2016/07/01/ business/self-driving-tesla-fatal-crash-investigation.html.

[76] *See* Fashingbauer Cooper, *This is why AI shouldn't design inspirational posters*, *supra*; Burgess, *Just like humans, artificial intelligence can be sexist and racist*, *supra*; Price, *Microsoft is deleting its AI chatbot's incredibly racist tweets*, *supra*.

[77] *See* Goodell, *Inside the Artificial Intelligence Revolution: A Special Report, Pt. 2*, *supra*.

[78] *See, e.g.*, Greg Miller, *The Moral Hazards and Legal Conundrums of Our Robot-Filled Future*, WIRED, Jul. 17, 2014, https://www.wired.com/2014/07/moral-legal-hazards-robot-future; Mike Power, *What happens when a software bot goes on a darknet shopping spree?*, THE GUARDIAN, Dec. 5, 2014, *available at* https://www.theguardian.com/ technology/2014/dec/05/software-bot-darknet-shopping-spree-random-shopper.

[79] Wendy Wen Yun Chang, *Time to Regulate AI in the Legal Profession?*, HINSHAW CULBERTSON LLP, Jul. 12, 2016, http://www.hinshawlaw.com/newsroom-news-Wendy-Wen-Yun-Chang-Authors-Article-on-Regulation-of-Artificial-Intelligence-in-the-Legal-Profession.html.

[80] *Id.*

[81] *Id.*

[82] *Id.*

[83] *Id.*

[84] *Id.*

B. Lawyers using artificial intelligence must be competent with the technology.

In August 6, 2012, the American Bar Association amended Model Rule of Professional Conduct 1.1 in a comment to emphasize that attorneys:

> should keep abreast of changes in the law and its practice, including the benefits and risks associated with relevant technology, engage in continuing study and education and comply with all continuing legal education requirements to which the lawyer is subject.[85]

This comment to Model Rule 1.1 has been adopted, largely in its entirety, by 27 states to date.[86]

Although it has not yet adopted Model Rule 1.1, the California State Bar has opined on the question of whether attorneys need to be competent in technology as applied under the California Rule of Professional Conduct 3-110. It noted that if an attorney lacks the skills or resources necessary to understand how AI reached its conclusion in the e-discovery process or performed the work, "the attorney must try to acquire sufficient learning and skill, or associate or consult with someone with expertise to assist."[87] The hypothetical scenario explored by the California Bar focused on predictive coding in artificial intelligence.[88]

The California Bar noted that this does not necessarily mean that the attorney must learn computer code to ethically use artificial intelligence in his or her practice, but instead that it is similar to a duty to supervise.[89] It is permissible for the attorney to consult a technical or computer expert—the point is that the attorney reviews the work and ensures that it is complete and that no privileged or confidential information is inadvertently disseminated or disclosed.[90] Observers anticipate that the California Bar will likely apply this approach to electronic discovery to other applications of artificial intelligence in the practice of law.

California is not alone. The Florida Supreme Court, in adopting Model Rule 1.1's admonition that "a lawyer should engage in continuing study and education, including an understanding of the risks and benefits associated with the use of technology," noted that "[c]ompetent representation may also entail safeguarding confidential information related to the

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[85] COMMISSION ON ETHICS 20/20, AMERICAN BAR ASSOCIATION, RESOLUTION 105A (2012), 3, https://www.americanbar.org/content/dam/aba/administrative/ethics_2020/2012_hod_annual_meeting_105a_filed_may_2012.authcheckdam.pdf; *see also* MODEL R. PROF'L CONDUCT 1.1 cmt. 8 (2012).

[86] The 27 states are (in alphabetical order):

- Arizona: ARIZ. R. PROF'L CONDUCT 1.1 cmt. 6.
- Arkansas: ARK. R. PROF'L CONDUCT 1.1 cmt. 8; *see also In re Ark. Bar Ass'n Pet. Proposing Amendments to Ark. R. of Prof'l Conduct*, 2014 Ark. 162 (2014), *available at* http://opinions.aoc.arkansas.gov/WebLink8/0/doc/327863/Electronic.aspx.
- Colorado: COLO. R. PROF'L CONDUCT 1.1 cmt. 8.
- Connecticut: CONN. R. PROF'L CONDUCT 1.1, cmt.
- Delaware: DEL. R. PROF'L CONDUCT 1.1 cmt. 8.
- Florida: FLA. R. PROF'L CONDUCT 1.1 cmt; *see also In re Amendments to Rules Regarding the Fla. Bar*, 200 So.3d 1225 (Fla. 2016).
- Idaho: IDAHO R. PROF'L CONDUCT 1.1 cmt 8.
- Illinois: ILL. R. PROF'L CONDUCT 1.1 cmt. 8.
- Iowa: IOWA R. PROF'L CONDUCT 32:1.1 cmt 8.
- Kansas: KAN. R. PROF'L CONDUCT 1.1 cmt. 8.
- Massachusetts: MASS. R. PROF'L CONDUCT 1.1 cmt. 8.
- Minnesota: MINN. R. PROF'L CONDUCT 1.1 cmt. 8.
- Nebraska: NEB. R. PROF'L CONDUCT 3-501.1 cmt. 6.
- New Hampshire: N.H. R. PROF'L CONDUCT 1.1 cmt. 8.
- New Mexico: N.M. R. PROF'L CONDUCT 16-101 cmt 6.
- New York: N.Y. R. PROF'L CONDUCT 1.1 cmt 8. The language is modified from the model rule: "To maintain the requisite knowledge and skill, a lawyer should (i) keep abreast of changes in substantive and procedural law relevant to the lawyer's practice, (ii) keep abreast of the benefits and risks associated with technology the lawyer uses to provide services to clients or to store or transmit confidential information, and (iii) engage in continuing study and education and comply with all applicable continuing legal education requirements . . ." *Id.*
- North Carolina: N.C. R. PROF'L CONDUCT 1.1 cmt 8. The language is modified from the model rule: ". . . including the benefits and risks associated with the technology relevant to the lawyer's practice." *Id.*
- North Dakota: N.D. R. PROFESSIONAL CONDUCT 1.1 cmt. 5.
- Ohio: OHIO R. PROF'L CONDUCT 1.1 cmt. 8.
- Oklahoma: OKLA. R. PROF'L CONDUCT 1.1 cmt. 6.
- Pennsylvania: PA. R. PROF'L CONDUCT 1.1 cmt 8; *see also* AMENDMENTS TO THE PENNSYLVANIA RULES OF PROFESSIONAL CONDUCT TO ADDRESS THE NEED FOR CHANGES IN DETECTION OF CONFLICTS OF INTEREST, OUTSOURCING, TECHNOLOGY AND CLIENT DEVELOPMENT, AND TECHNOLOGY AND CONFIDENTIALITY, 43 PA.B. 1997 (2013).
- Tennessee: TENN. R. PROF'L CONDUCT 1.1 cmt. 8.
- Utah: UTAH R. PROF'L CONDUCT 1.1 cmt. 8.
- Virginia: VA. R. PROF'L CONDUCT 1.1 cmt. 6.
- Washington: WASH. R. PROF'L CONDUCT 1.1 cmt. 8.
- West Virginia: W. VA. R. PROF'L CONDUCT 1.1 cmt. 8.
- Wisconsin: WIS. R. PROF'L CONDUCT 20:1.1 cmt. 8.
- Wyoming: WYO. R. PROF'L CONDUCT 1.1 cmt. 6.

[87] STATE BAR OF CALIFORNIA STANDING COMMITTEE ON PROFESSIONAL RESPONSIBILITY AND CONDUCT, Formal Opinion No. 2015-193 at 3 (2015).

[88] *Id.* at 5.

[89] *Id.*

[90] *Id.*

representation, including electronic transmissions and communications."[91]

In other words, attorneys have an affirmative ethical obligation to understand the risks and benefits of the technology they are using in their practice, as well as the technology itself. This does not require attorneys to become proficient in any particular programming language or masters in artificial intelligence programming—at least not yet.[92] However, the ethical duty of competence does require attorneys to have a good understanding of how the technology works and what it does.

This includes being fully aware of the risks associated with technology—such as the possibility of data breaches when sensitive client data is stored on a cloud storage service or utilizing third-party software to generate legal documents or conduct everyday billing. The California Bar contemplated some of these risks in its discussion surrounding electronic discovery, noting that such software, while reliable, may still make errors and fail to recognize documents containing sensitive client data, or that the non-lawyer technology personnel may not contemplate employing search terms that would recognize sensitive or important documents.[93] The North Carolina State Bar recognized the risks of using technology generally—such as cloud storage services, billing software, legal research programs, or other technologies—because online services get hacked, computer data can get corrupted, systems can fail, or other issues may arise.[94] It ruled that attorneys are welcome to use such technology, they should make sure that they are aware of the risks and that they make diligent efforts to safeguard against those risks (such as implementing a firewall to protect against hackers, for instance).[95]

Attorneys may rely on technology experts to assist them with the technology they use in the practice of law, but they still have to have sufficient technical competence as well. The Florida Supreme Court held that "competent representation may involve a lawyer's association with, or retention of, a non-lawyer with established technological competence in the relevant field."[96] The California State Bar shares this opinion.[97] Despite being allowed to employ such technical assistance, attorneys have to understand the technology enough to know how to perform work with the technology and verify that the work performed by the technology is accurate, complete, and does not disclose confidential or privileged information.[98]

Challenges with complying with the duty of competence could also arise from the vendors of the technology themselves. Because most artificial intelligence technologies are proprietary, the companies owning the technology may be uncomfortable with divulging too much information about how the technology works.[99] Attorneys who do not know how an artificial intelligence program works and then use it anyways expose themselves—and their clients—to a great deal of risk. For instance, an AI vendor, out of a desire to protect their interests in proprietary technology, may decide not to educate the attorney on the AI's data collection and storage methods and that data is deleted before the end of the spoliation period in a case or stores the data in an unsecured server or that the contents—regardless of sensitivity—of the data being processed are distilled into a separate text file and saved indefinitely to teach the artificial intelligence to perform better. If the attorney cannot get answers to such questions, he or she may need to consider not using the technology, no matter how great it is.

Further, it is on the attorney to know to ask the vendor questions about the technology and ensure that he or she is informed to his or her satisfaction, as the vendor, no matter how knowledgeable with artificial intelligence, is a non-lawyer, and cannot be expected contemplate all of the issues that would be of importance to the attorney.

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[91] *In re Amendments to Rules Regarding the Fla. Bar*, 200 So.3d at 1226.

[92] Although it is not necessary for attorneys to be proficient in any computer language or artificial intelligence programming, currently, as technology develops and becomes more pervasive in the practice of law, this may change. Such a possibility, however, is purely speculative at this point.

[93] STATE BAR OF CALIFORNIA STANDING COMMITTEE ON PROFESSIONAL RESPONSIBILITY AND CONDUCT, Formal Opinion No. 2015-193 at 5-7.

[94] NORTH CAROLINA STATE BAR, 2011 FORMAL ETHICS OPINION 6: SUBSCRIBING TO SOFTWARE AS A SERVICE WHILE FULFILLING THE DUTIES OF CONFIDENTIALITY AND PRESERVATION OF CLIENT PROPERTY (2012), *available at* https://www.ncbar.gov/for-lawyers/ethics/adopted-opinions/2011-formal-ethics-opinion-6/.

[95] *Id.*

[96] *In re Amendments to Rules Regarding the Fla. Bar*, 200 So.3d at 1226.

[97] STATE BAR OF CALIFORNIA STANDING COMMITTEE ON PROFESSIONAL RESPONSIBILITY AND CONDUCT, Formal Opinion No. 2015-193 at 5.

[98] *See id.* at 5-7.

[99] Brian Sheppard, *Does machine learning-powered software make good research decisions? Lawyers can't know for sure*, AMERICAN BAR ASSOCIATION JOURNAL, Nov. 22, 2016, *available at* http://abajournal.com/legalrebels/article/does_machine-learning_powered_software_make_good_ research_decisions_lawyers/.

C. Lawyers using artificial intelligence owe a duty to supervise not only the personnel assisting with the technology, but the technology itself.

Attorneys have an express obligation to supervise the work of lawyers and non-lawyers who assist in providing legal services.[100] In 2012, the American Bar Association modified the model rules to suggest that the duty to supervise applies not just to humans, but to non-humans, such as artificial intelligence, when it renamed Rule 5.3 from "Responsibilities Regarding Nonlawyer Assistants" to "Responsibilities Regarding Nonlawyer Assistance."[101] Thus, even where artificial intelligence is used to assist in legal decision-making, attorney oversight is still necessary.

Attorneys must supervise the artificial intelligence just as they would their own associates, paralegals, or other law firm staff.[102] The onus is on the attorney employing artificial intelligence to ensure the work is complete and correct, doesn't inadvertently disclose confidential or privileged information, is the best position strategically for the client, and does not expose the client to unnecessary risk.[103] Attorneys will still need to review memoranda generated by artificial intelligence, including verifying that the law cited is current and complete and checking the conclusions reached.[104] Further, attorneys will still need to keep abreast of the law, because it is one thing to have access to a lot of information through artificial intelligence databases, and another to know what to do with that information.

Additionally, decision-making should always have the review of the human lawyer, because artificial intelligence may not apply the emotional or empathetic element that a human would—in other words, morality or emotional intelligence for a machine does not work the same way as it does with a human.[105] Counseling with emotional intelligence will still fall with the human attorney.[106]

Further, reasoning by analogy is not something current artificial intelligence is able to do well, but human lawyers do. Currently, artificial intelligence like Ross is able to parse through massive amounts of data and answer questions to more direct legal issues. However, it remains to be seen whether such technology can perform this task for legal questions of first impression, where unfavorable facts require razor-sharp analysis that can distinguish one issue from another, or other complex legal issues.

This applies even to judicial decisions where algorithms are utilized. Some critics of the use of algorithms in setting bail or criminal sentencing argue that the technology is only as good as the people who write the code and that implicit human bias—such as racial bias—carries into the artificial intelligence or that artificial intelligence can be taught to have bias based on what it observes from past rulings or other human behavior.[107] One criminal defendant challenged his AI-based sentencing on due process grounds—since the algorithms employed are propriety, there is no transparency—but without success.[108] Other critics note that artificial intelligence may be too logical and not be able to learn when to be compassionate in certain situations, as a human would.[109] If the critics are correct, judges will need to retain the authority to review the conclusions produced by artificial intelligence and not simply rely (or be forced to rely by statute) on the decisions made by the artificial intelligence. Judges should be cautious not to assume that simply because a decision was made by emotionless artificial intelligence that it was truly made without bias.

Additionally, parties submitting to artificial intelligence-based dispute resolution should still have the final settlements reviewed by a judge before the judge or the state signs off on the order.[110] This is necessary to avoid risk of error or misapplication of the law by the technology, or what may seem like a fair deal but is actually one-sided.

Attorneys should also supervise artificial intelligence tools to protect against other problematic behavior: such as destroying documents subject to a litigation hold before their time and exposing the attorney and client to the risk of spoliation charges,

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[100] MODEL R. PROF'L CONDUCT 5.1, 5.3 (2012).
[101] *Id.* at 5.3.
[102] STATE BAR OF CALIFORNIA STANDING COMMITTEE ON PROFESSIONAL RESPONSIBILITY AND CONDUCT, Formal Opinion No. 2015-193 at 3.
[103] *See id.* at 5-7.
[104] *See id.*; *see also* Steve Lohr, *A.I. Is Doing Legal Work. But It Won't Replace Lawyers, Yet.*, *supra*.
[105] *See* Lopez, *But What About Lawyers? A Q&A With Richard Susskind on AI in Law*, *supra*.
[106] Jewel, *The Indie Lawyer of the Future: How New Technology, Cultural Trends, and Market Forces Can Transform the Solo Practice of Law*, *supra*.
[107] *See* Angwin et al, *Machine Bias*, *supra*; Bhorat, *Do we still need human judges in the age of Artificial Intelligence?*, *supra*; Burgess, *Just like humans, artificial intelligence can be sexist and racist*, *supra*; Katherine Freeman, ALGORITHMIC INJUSTICE: HOW THE WISCONSIN SUPREME COURT FAILED TO PROTECT DUE PROCESS RIGHTS IN *STATE V. LOOMIS*, 18 N.C. J.L. & TECH. ON. 75 (2016); Jason Tashea, *Courts Are Using AI to Sentence Criminals. That Must Stop Now*, WIRED, Apr. 17, 2017, https://www.wired.com/2017/04/courts-using-ai-sentence-criminals-must-stop-now/.
[108] *State v. Loomis*, 881 N.W.2d 749 (Wis. 2016).
[109] *See* Lopez, *But What About Lawyers? A Q&A With Richard Susskind on AI in Law*, *supra*.
[110] *E-Divorce: How artificial intelligence could help Australian couples break up quickly and cheaply*, BUSINESS INSIDER AUSTRALIA, *supra*.

inadvertently disclosing sensitive information to third parties, making sensitive information stored on an internet or cloud server publicly available, or other errors that could be the result of bad programming or learning that have catastrophic consequences.

D. Lawyers using artificial intelligence owe a duty to communicate their use of such technology to the clients it affects.

Model Rule 1.4(a)(2) requires an attorney to "reasonably consult with the client about the means by which the client's objectives are to be accomplished."[111] Thus, an attorney intending to use artificial intelligence in his or her provision of services should communicate such with the client.

Although this may seem a mundane concern when using, for instance, a legal research search engine, it is worth observing that the attorney is still entering search terms relevant to the client's representation into a Boolean search engine and that this information is passed through a third-party: the provider of the database search services. Similarly, an attorney making use of third-party billing software, third-party document preparation services, or third-party electronic discovery servers are still passing potentially sensitive client data through those vendors. Lawyers cannot assume that all clients are willing to take the risks associated with the employment of some or all of the artificial intelligence they use and so should clearly communicate with the client the technology they intend to use and how they intend to use it.

E. Lawyers using artificial intelligence owe a duty to ensure that confidential client information is safeguarded.

It is a well-known rule that attorneys cannot disclose a client's confidential information without the client's consent, the disclosure is impliedly authorized, or some other exception applies.[112] Use of artificial intelligence in the practice of law certainly carries a risk of inadvertent unauthorized disclosure of such sensitive information.

The California Bar contemplated this risk with electronic discovery technology.[113] Even where the risk of disclosure of privileged documents is not an issue, disclosure of proprietary or other sensitive or confidential information may still be an issue.[114] For this reason, the California Bar admonished practitioners to not only understand how the technology they employ works, but also to make sure that client data is properly safeguarded.[115]

Thus, failure to take adequate precautions and have a competent understanding of the technology being used could result in inadvertent disclosure of privileged, confidential, or sensitive information.[116]

Many artificial intelligence programs that attorneys use or are anticipated to use are provided through third-party vendors, and so non-disclosure and confidentiality agreements may also be necessary if an attorney hires these vendors for the use of such technology. Also, to further the duty of confidentiality, attorneys may need to investigate how their vendors store and process data, what security protocols are implemented to protect sensitive data, who will have access to the information and what personnel procedures are in place to ensure their compliance with confidentiality requirements, and what the vendors do with the information after the projects are over.[117]

The duty of confidentiality will also extend to a duty to secure client data from hacking or other intrusions. Just as self-driving cars and nuclear weapons need to be protected from hackers and other intruders,[118] attorneys will need to ensure the same for client information. As technology advances and security breaches become more prevalent, attorneys need to ensure they take reasonable defensive measures. This includes maintaining adequate firewalls or verifying that the vendors with whom data is stored or processed also maintain adequate firewalls.

V. OTHER CHALLENGES WITH A.I. AND THE LAW

Other questions arise where artificial intelligence and the law intersect beyond the attorney's ethical concerns. Computers are known to malfunction and cause problems; software that is heavily integrated in people's lives can cause significant problems when it does not work as it should. Because this technology is new and the law has yet to catch up, this is largely uncharted territory.

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[111] MODEL R. PROF'L CONDUCT 1.4 (2016).
[112] *Id.* at 1.6.
[113] STATE BAR OF CALIFORNIA STANDING COMMITTEE ON PROFESSIONAL RESPONSIBILITY AND CONDUCT, Formal Opinion No. 2015-193 at 6-7.
[114] *Id.*
[115] *Id.* at 7.
[116] *Id.*
[117] *See* MODEL R. PROF'L CONDUCT 1.6, cmt. 18 (2016); *see also* Abigail Beall, *Computers Can Now Keep SECRETS: Google's Neural Network Is Learning to Encrypt Its Own Messages*, ROBOTICS NEWS, Nov. 28, 2016, http://www.robotics.news/2016-11-03-computers-can-now-keep-secrets-googles-neural-network-is-learning-to-encrypt-its-own-messages.html (AI technologies learning how to encrypt data of their own volition).
[118] Greenberg, *The Jeep Hackers Are Back To Prove Car Hacking Can Get Much Worse*, *supra*.

For example, laypeople accessing legal technology do not have the legal training or protection that attorneys possess.[119] Pro se litigants will also face a distinct disadvantage if they attempt to employ the artificial intelligence technology designed for attorneys, because they do not have the skill or training that is required for an attorney. They will rely on the suggestions and advice given to them by the software that they use, such as software assisting in the preparation of legal documents. If an unlicensed person were performing the same service as the program, it would be called the unauthorized practice of law.[120]

Thus, ethical issues appear not only for lawyers using the technology but also for unlicensed companies providing legal services to lay people. "AI legal services should not be permitted to hold themselves out as providing legal services to lay persons without an actual lawyer's involvement and supervision," and further regulation of such technology is necessary.[121]

Additionally, eventually the law will also need to address civil and criminal liability when artificial intelligence makes autonomous decisions that break the law or cause injury to a human. As self-driving cars, automated social media bots, and other programs become more everyday, artificial intelligence is already running afoul of the law,[122] offending basic human decency,[123] or simply making mistakes that cause injury or death.[124]

For instance, when an artificial intelligence program in Switzerland made illegal purchases, the Swiss authorities decided to "punish" the AI and not the developer, since it was clear that the developer had made no contribution or direction for the AI to make the purchases it did.[125] Some commentators also express concern over how criminal acts performed on an android—a human-like robot—should be viewed legally. For instances, people have begun raising concern over "sex robots" designed to look and behave like children, which already exist and are beginning to test the law.[126]

Although some critics of artificial intelligence raise concern that humans could lose control of the artificial intelligence they create—and what kinds of liability could arise therefrom—there are conflicting schools of thought as to the realistic probability of such an occurrence.[127] A more likely concern is whether giving artificial intelligence control over certain aspects of our lives, in turn, gives control of those aspects of our lives to the parties who created and own the artificial intelligence.[128]

As this technology becomes a larger part of everyday life, many of these questions—which are now largely hypothetical—could become pivotal.

IV. CONCLUSION

There is no question that the computerized research tools employed now, while imperfect, improve upon the law libraries full of books, with supplements and updates, that some legal practitioners used for decades. Whether research "suggestions" will be commonly beneficial, or the yet-to-come reality of "hard" artificial intelligence meets the ideal remains to be seen. Artificial intelligence does not appear poised to replace experienced attorneys handling complex, sophisticated matters, like municipal bond packages, large bankruptcies, or securities litigation, for a few examples.

Despite breathless talk about robot lawyers and machine learning, few are predicting the imminent arrival of computers that can employ human factors to think creatively, provide strategic advice, or even offer wise counsel and empathy. Few are considering software that can take a deposition, select a jury, or make an oral argument. Software that assists attorneys in more effectively deploying those skills through data mining is foreseeable if not already available from

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[119] Chang, *Time to Regulate AI in the Legal Profession?*, *supra*.
[120] *Id.*
[121] *Id.*
[122] *See, e.g.*, Miller, *The Moral Hazards and Legal Conundrums of Our Robot-Filled Future*, *supra*; Mike Power, *What happens when a software bot goes on a darknet shopping spree?*, *supra*.
[123] *See, e.g.*, Burgess, *Just like humans, artificial intelligence can be sexist and racist*, *supra*; Rob Price, *Microsoft is deleting its AI chatbot's incredibly racist tweets*, *supra*.
[124] *See, e.g.*, Vlasic, *Self-Driving Tesla Was Involved in Fatal Crash, U.S. Says*, *supra*; David Gutman, *Who'll be responsible when self-driving car crashes?*, SEATTLE TIMES, Jun. 28, 2017, *available at* http://www.seattletimes.com/seattle-news/transportation/wholl-be-responsible-when-self-driving-car-crashes/; Jack Stilgoe, *What will happen when a self-driving car kills a bystander?*, THE GUARDIAN, Jun. 24, 2017, https://www.theguardian.com/science/political-science/2017/jun/24/what-will-happen-when-a-self-driving-car-kills-a-bystander.
[125] Miller, *The Moral Hazards and Legal Conundrums of Our Robot-Filled Future*, *supra*; Mike Power, *What happens when a software bot goes on a darknet shopping spree?*, *supra*.
[126] Miller, *The Moral Hazards and Legal Conundrums of Our Robot-Filled Future*, *supra*.
[127] James Walker, *Researchers shut down AI that invented its own language*, DIGITAL JOURNAL, Jul. 21, 2017, http://www.digitaljournal.com/tech-and-science/technology/a-step-closer-to-skynet-ai-invents-a-language-humans-can-t-read/article/498142; *but see* Fung, *Everything you think you know about AI is wrong*, *supra*.
[128] *See* Goodell, *Inside the Artificial Intelligence Revolution: A Special Report, Pt. 2*, *supra*.

publishers of legal materials. But these tools still require professional application—they are not self-driving cars.

Everyone knows that computers crash, and so can cars driven by computers. Because of this, humans should refuse to succumb to the temptation of blindly relying upon the self-driven car to recognize all potential dangers. Instead, they should keep their hands on the wheel and monitor the road as if they were still manually driving.

Similarly, human attorneys should not fall complacent and assume that the artificial intelligence technology they employ in the practice of law is performing its job correctly. Instead, they should keep their hands on the wheel and ensure that sensitive client information is protected and that legal conclusions generated by artificial intelligence are correct. Just like the human driver in the autonomous car should still know how to drive, although not necessarily be an expert in mechanical engineering, the human attorney needs to also understand how the artificial intelligence works and what risks are associated with using it.