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# Technology and the (Re)Construction of Law

Christian Powell Sundquist

Innovative advancements in technology and artificial intelligence have created a unique opportunity to re-envision both legal education and the practice of law. The COVID-19 pandemic has accelerated the technological disruption of both legal education and practice, as remote work, “Zoom” client meetings, virtual teaching, and online dispute resolution have become increasingly normalized. This essay explores how technological innovations in the coronavirus era are facilitating radical changes to our traditional adversarial system, the practice of law, and the very meaning of “legal knowledge.” It concludes with suggestions on how to reform legal education to better prepare our students for the emerging techno-legal landscape.

## I. The Technological Disruption of Law

The practice of law, as well as legal education, has long been impacted by new technological developments. Technology has arguably positively shaped the legal field by allowing lawyers to more efficiently practice law while expanding the ability of nonlawyers to access legal advice. The law has steadily embraced technological innovation over time, locating efficiencies in the movement from telegraph, facsimile and teleconference technologies to internet, cellular, virtual conference, and artificially intelligent systems. The emergence of online research tools such as Westlaw and Lexis, for example, has tremendously changed the practice and teaching of law over the past many decades. Many lawyers and law firms have embraced technological innovation as improving the efficiency and cost of legal practice, while (perhaps) expanding access to justice and allowing lawyers to devote more energy to complex legal and analytical issues.

Nonetheless, a common fear remains that looming improvements in artificial intelligence will render the majority of traditional legal jobs obsolete, thus dramatically calling into question both the existence and traditional mission of law schools.<sup>1</sup> A number of recent innovations have significantly altered the

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1. See, e.g., RICHARD SUSSKIND, *TOMORROW'S LAWYER* (2013) (predicting fundamental and irreversible changes in the world of law practice); Jordan Bigda, *The Legal Profession: From Humans to Robots*, 18 J. HIGH TECH. L. 396 (2018) (assessing concerns that law firms will replace lawyers).

traditional practice of law in the past few years, spurred by advancements in machine-learning software that potentially may eliminate the need for human lawyers to perform a variety of traditional legal tasks.

Law firms and lawyers across the world have begun integrating law-based artificial intelligence systems into their practice to improve efficiency and the delivery of lower-cost basic legal services to clients.<sup>2</sup> IBM's "ROSS" artificial intelligence system, for example, has been touted as "the world's first artificially intelligent attorney."<sup>3</sup> ROSS was developed to provide answers to legal questions based on a software analysis of legal databases, as well as to monitor case law and other developments.<sup>4</sup> The global law firm Baker & Hostetler is using the machine-learning program ROSS to allow lawyers to obtain answers to legal issues by asking the ROSS system a simple question.<sup>5</sup> The ROSS system is claimed to be able to "sift through a billion text documents a second" to provide the lawyer with "a cited answer and topical readings from legislation, case law and secondary sources."<sup>6</sup> ROSS then utilizes feedback from past searches to improve its "understand[ing] of the law, [and] not just translate words and syntax into search results."<sup>7</sup> ROSS proponents claim it can "save lawyers up to thirty percent of their time, the same percentage that surveys show new attorneys spend on legal research."<sup>8</sup>

E-discovery technology has also advanced to the point where an artificial intelligence system such as Contract Intelligence ("COiN") (a JP Morgan software program) can perform (in mere seconds) document reviews of complex matters that used to require 360,000 human hours.<sup>9</sup> Similarly, online legal services companies, such as LegalZoom, provide outsourcing of basic legal drafting and

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with "artificially intelligent programs" but concluding the more likely outcome will be new and enhanced opportunities for lawyers).

2. See Erin Winick, *Lawyer-Bots Are Shaking up Jobs*, MIT TECH. REV. (Dec. 12, 2017), <https://www.technologyreview.com/s/609556/lawyer-bots-are-shaking-up-jobs/>; Christian Barker, *Artificial Intelligence: Direct and Indirect Impacts on the Legal Profession*, 19 TORTSOURCE 1 (2017); Bigda, *supra* note 1.
3. Chris Weller, *The World's First Artificially Intelligent Lawyer Was Just Hired at a Law Firm*, BUS. INSIDER (May 16, 2016), <https://www.businessinsider.com/the-worlds-first-artificially-intelligent-lawyer-gets-hired-2016-5>.
4. *Id.*
5. *Id.*
6. Anthony Sills, *ROSS and Watson Tackle the Law*, IBM (Jan. 14, 2016).
7. *Id.*
8. *But see* Jamie J. Baker, 2018: *A Legal Research Odyssey: Artificial Intelligence as a Disruptor*, 110 LAW LIBR. J. 5, 16 (2018) (casting doubt on such Panglossian assertions: "Even with this efficiency though, [ROSS] is NOT ready to save attorneys thirty percent of their time because it does not have the computing capability to perform the requisite legal research.")
9. See Winick, *supra* note 2 (reporting that JP Morgan announced that COiN can "perform document review tasks that took legal aides 360,000 hours," in seconds).

other tasks.<sup>10</sup> A recent study demonstrated that law-based artificial intelligence systems were able to more quickly and accurately identify potential legal issues in a series of nondisclosure agreements than seasoned contract attorneys.<sup>11</sup>

Likewise, CaseMine has developed CaseIQ, an artificial intelligence tool to assist with complex legal research projects.<sup>12</sup> CaseIQ allows lawyers to “[o]btain highly relevant search results directly from a brief (or other associated legal document), bypassing the need to reformulate case facts into searchable legal propositions.”<sup>13</sup> In the UK, which has been more welcoming toward AI than the US, Robot Lawyer Lisa is an AI-based legal technology that can “create legally binding agreements with another party.”<sup>14</sup> Enabled by platforms such as Chatbot, automated “lawyer bots,” such as DoNotPay, which helps people sue credit reporting agencies and contest parking tickets, are also quickly proliferating.<sup>15</sup> Professor Michele DeStefano has posited that “[m]ore and more professional service firms, including law firms, are utilizing AI every day to help with compliance and due diligence and to help automate contract analysis and exchange, conduct legal research, and do document review.”<sup>16</sup>

These technological advancements have also radically altered the spatial location of lawyers, contributing to a growth in outsourcing, remote work, and online client counseling.<sup>17</sup> For example, Hive Legal is a modern technology-based law firm based out of Australia that utilizes technological tools to “facilitate remote

10. LEGALZOOM, <https://www.legalzoom.com/> (last visited 6/27/2022).
11. Christian B. Sundquist, *Artificial Intelligence, Algorithmic Knowledge and the Future of Law Schools*, PLACE TO DISCUSS BEST PRACTICES FOR LEGAL EDUC. (Apr. 9, 2018), <https://bestpracticeslegaled.com/2018/04/09/artificial-intelligence-algorithmic-knowledge-and-the-future-of-law-schools/>.
12. See Winick, *supra* note 2.
13. *CaseMine Features*, CASEMINE (2022), <https://www.casemine.com/home/guide> [<https://perma.cc/SF4X-R576>]. Further, the CaseIQ system feeds the search result information “into a complex predictive algorithm that leverages the archived intelligence of legal experts who’ve explored these issues previously to compile a list of highly relevant case laws, thereby highlighting potential missing points of law, or alternative arguments not appraised prior.” *Id.*
14. Kane Fulton, *Founder Facing a Legal Problem? Call in Robot Lawyer LISA*, TECH NATION (Mar. 8, 2019), <https://technation.io/news/founder-facing-a-legal-dispute-call-in-robot-lawyer-lisa/>; In Canada, Kira Systems is also an artificial intelligence tool that can provide contract review and “identifies, extracts, and analyzes content in...contracts and other documents.” Kira further will provide legal “insights” concerning a wide range of contractual issues (such as compliance and due diligence). *About Kira*, KIRA (2022), <https://kirasystems.com/newsroom/about/>.
15. CHATBOT (2022), <https://www.chatbot.com/> [<https://perma.cc/4XFJ-DWRJ>]; DONOTPAY (2022), <https://donotpay.com/> [<https://perma.cc/SPV5-SMJU>].
16. MICHELE DESTEFANO, LEGAL UPHEAVAL: A GUIDE TO CREATIVITY, COLLABORATION, AND INNOVATION IN LAW 22 (2018).
17. See Michael D. Bell, *Technology and Outsourcing*, 72 TEX. B. J. 542 (discussing outsourcing in the legal profession); Daniel S. Wittenberg, *The Virtual Practice of Law*, ABA (Mar. 22, 2017), <https://www.americanbar.org/groups/litigation/publications/litigation-news/business-litigation/the-virtual-practice-of-law/> [<https://perma.cc/HG24-5F7D>].

working” by attorneys across the globe “to reduce costs” of legal services.<sup>18</sup> A number of other technological services have developed to aid practicing lawyers, such as Clio, which helps lawyers modernize their practice by providing weekly live shows, workshops, and an online community.<sup>19</sup> The COVID-19 pandemic has only accelerated the transition to remote legal work, with many law firms questioning the continued viability of the traditional office-based model in light of the cost savings associated with online practice:<sup>20</sup> “The coronavirus pandemic has forced lawyers across the U.S. to learn how to work from home, and left offices sitting empty for months, leading many managing partners to ask – why were we paying for all that space.”<sup>21</sup>

Our system of judicial adjudication has also been greatly impacted by technology, with virtual courts and online dispute resolution (“ODR”) growing exponentially over just the past few years.<sup>22</sup> The legal futurist Richard Susskind has predicted in his new book *Online Courts and the Future of Justice* that the transition to the online judicial resolution of disputes will significantly expand, leading to a world where all aspects of adjudication (including witness examination, oral arguments, and so forth) will be handled virtually, and where automated online courts will utilize predictive analytics to reach holdings based on prior court decisions.<sup>23</sup>

While Susskind’s predictions raise a bevy of concerns (such as the possibility of further entrenching bias in the law), the concept of online courts is quickly gaining traction across the United States and world. Since 2016, “dozens if not hundreds” of courts have implemented online dispute resolution for certain cases—a trend that is almost certain to increase in light of the COVID-19 pandemic.<sup>24</sup>

## II. The Changing Meaning of the “Practice of Law”

The widespread adoption of artificially intelligent technologies has led to novel legal questions about what it means to “practice law” (and, as such, what it means to be a “lawyer”). The meaning of the “practice of law” is set forth by

18. *Our Business Model*, HIVE LEGAL, <https://hivelegal.com.au/how/> (last visited July 28, 2020).

19. Clio, <https://www.clio.com/resources/modernize-your-firm-series/>

20. Sara Lord, ANALYSIS: *The New Normal—Law Firms May Never Be the Same*, BLOOMBERG LAW (MAY 7, 2020, 3:47 PM); Frank Ready, *COVID-19 Pushed Legal Toward Tech, Remote Work. There May Be No Going Back*, LAW.COM (Apr. 7, 2020, 10:00 AM).

21. Caroline Spiezio, *Law Firm Leaders Expect Office Footprint to Shrink Post-Pandemic*, 6/5/20 REUTERS LEGAL 11:23:09 (June 5, 2020).

22. RICHARD SUSSKIND, *ONLINE COURTS AND THE FUTURE OF JUSTICE* (2019); Joint Technology Committee et al., *JTC Resource Bulletin: Case Studies in ODR for Courts* (2020) [https://www.ncsc.org/\\_\\_\\_data/assets/pdf\\_file/0020/16517/2020-01-28-odr-case-studies-v2-final.pdf](https://www.ncsc.org/___data/assets/pdf_file/0020/16517/2020-01-28-odr-case-studies-v2-final.pdf) [<https://perma.cc/CR5K-DCZN>]; *Judiciary Preparedness for Coronavirus (COVID-19)*, U.S. COURTS (Mar. 12, 2020), <https://www.uscourts.gov/news/2020/03/12/judiciary-preparedness-coronavirus-covid-19> [<https://perma.cc/SU8J-Y6Y4>].

23. SUSSKIND, *ONLINE COURTS*, *supra* note 22.

24. *JTC Resource Bulletin*, *supra* note 22, at 1.

a variety of often conflicting state, federal and professional rules. These rules have so far provided little guidance in terms of distinguishing between human versus AI provision of legal services.<sup>25</sup>

These issues came to a head in the Second Circuit's decision in *Lola v. Skadden LLP* a few years ago.<sup>26</sup> The crux of the dispute was whether document review work provided by a contract attorney to a large law firm constituted the "practice of law," such that overtime benefits should be provided to the contract attorney under the provisions of the Federal Labor Standards Act ("FLSA").<sup>27</sup> The defendant law firm argued that the contract attorney's labor was exempt from the FLSA's overtime rules since he was a "licensed attorney engaged in the practice of law" and thus fit within the exemption created for employees "employed in a bona fide . . . professional capacity."<sup>28</sup> The plaintiff, appealing a dismissal of his action by the trial court, argued that his document review work did not constitute the "practice of law" under the FLSA since it was entirely "devoid of legal judgment."<sup>29</sup>

The Second Circuit declined to articulate a new federal standard to define the "practice of law" under the FLSA.<sup>30</sup> The court instead analyzed North Carolina law on the issue (as well as the law of New York, Colorado, Oregon, Nevada, and Illinois) and concluded that a key element to the "practice of law" was the "exercise of legal judgment."<sup>31</sup> The court thus vacated the district court's dismissal of the action on the grounds that the plaintiff had adequately

25. See, e.g., Drew Simshaw, *Ethical Issues in Robo-Lawyer: The Need for Guidance on Developing and Using Artificial Intelligence in the Practice of Law*, 70 HASTINGS L.J. 173, 195-207 (2018) (discussing, *inter alia*, the shortcomings in current ABA Model Rules of Professional Conduct in responding to the use of AI in legal practice).
26. 620 F. App'x 37 (2nd Cir. 2015).
27. *Id.* at 39.
28. *Id.* at 40 (interpreting 29 U.S.C. § 213(a)(1)).
29. *Id.* at 39. In support of this claim, the plaintiff alleged that "his work was closely supervised by the Defendants," that he was provided with the documents to review by the Defendants, the search terms and procedure to use in the review process by the Defendant, and that his "entire responsibility . . . consisted of (a) looking at documents to see what search terms, if any, appeared in the documents, (b) marking those documents into the categories predetermined by Defendants, and (c) at times drawing black boxes to redact portions of certain documents based on specific protocols that Defendants provided." *Id.* at 40.
30. *Id.* at 41. Indeed, the existing FLSA standard does little to clarify the meaning of the phrase by defining those who "practice law" as reaching "[a]ny employee who is the holder of a valid license or certificate permitting the practice of law . . . or any of their branches and is actually engaged in the practice thereof." 29 C.F.R. § 541.304.
31. *Lola*, 620 F. App'x at 44-45. The Second Circuit noted that "there is no federal law governing lawyers" and that "[r]egulating the 'practice of law' is traditionally a state endeavor." *Id.* at 42. The court ultimately vacated the district court's dismissal of the action on the grounds that the plaintiff had adequately alleged that "he failed to exercise any legal judgment in performing his duties for the Defendant." *Id.* at 45.

alleged that “he failed to exercise any legal judgment in performing his duties for the Defendants.”<sup>32</sup>

The court’s analysis in reaching this conclusion is striking and has ramifications for future attempts to draw the line between machine work and the human practice of law. The court reasoned that the plaintiff was not “practicing law,” since he only “provided services that a machine could have provided.”<sup>33</sup> In particular, the court held that “an individual who . . . undertakes tasks that could otherwise be performed entirely by a machine cannot be said to engage in the practice of law.”<sup>34</sup>

Other courts have followed the lead of the *Lola* decision in recent years. The Southern District of New York, for example, analyzed whether the plaintiff was engaged in “the practice of law” in the context of a similar FLSA lawsuit.<sup>35</sup> The plaintiff, a temporary contract attorney for a large law firm, alleged that he was entitled to overtime pay under the FLSA on the grounds that his document review duties did not amount to the “practice of law.”<sup>36</sup> The court applied the *Lola* framework while noting that “the exercise of some legal judgment [is] an essential element of the practice of law.”<sup>37</sup> The court found that plaintiff was in fact engaged in the practice of law as he exercised individual judgment in identifying documents as “privileged” and otherwise.<sup>38</sup>

Professors Simon, Lindsay, Sosa and Comparato have posited that the advancement of artificial intelligence technology has the potential to render human lawyers “obsolete,” impacting the law in at least two important ways.<sup>39</sup> First, they predict that “as machines evolve, they will encroach on and limit the tasks considered to be the ‘practice of law.’”<sup>40</sup> Second, they believe that “mechanistic tasks” will be eliminated from how we define the practice of law.<sup>41</sup> The distinction between “machine work” and the human “exercise of legal

32. *Id.* at 45.

33. *Id.*

34. *Id.*

35. *Henig v. Quinn Emanuel Urquhart & Sullivan, LLP*, 151 F. Supp. 3d 460, 469–70 (S.D.N.Y. 2015) (applying the *Lola* framework and finding that plaintiff’s document review work relied on the exercise of “legal judgment” since he did not adequately allege that his labor could have been performed by a machine.).

36. *Id.* at 461.

37. *Id.* at 468.

38. *Id.* at 469.

39. Michael Simon et al., *Lola v. Skadden and the Automation of the Legal Profession*, 20 YALE J.L. & TECH. 234 (2018).

40. *Id.* at 234.

41. *Id.*

judgment” has thus become a central issue in determining what constitutes the “practice of law”—with ramifications for both legal practice and legal education.<sup>42</sup>

### III. Legal Epistemology and the (Re)Construction of Legal Knowledge

Artificial intelligence technologies have the potential to shape the content and interpretation of “legal knowledge.” The knowledge-production dimension of law-based artificial intelligence technologies introduces unique concerns for legal education and practice, ranging from the embedding of human bias in the legal assumptions underlying such technology to broader issues of algorithmic accountability and transparency.

The compiling and interpretation of legal information by machine-learning technology, in particular, remains subject to potential coding bias in the algorithms and assumptions that underlie law-based artificial intelligence systems. This is particularly important given that “machine-learning technologies are being [touted] to predict the outcome of litigation and analyze various aspects of litigation.”<sup>43</sup> Much has been written about such machine-learning bias and how the production of algorithmic knowledge can replicate existing patterns of social inequality (by, for example, reinforcing gender and racial stereotypes).<sup>44</sup> The emergence of predictive policing models (such as PredPol, used by law enforcement to identify the likelihood of future criminal activity) and predictive risk assessment software (where judges around the country are beginning to use artificial intelligence software to determine criminal sentencing based on the likelihood that a person will commit a future crime) have been heavily criticized on privacy and social justice grounds.<sup>45</sup> One example is COMPAS, which is an algorithmic software that guides criminal sentencing decisions of judges by predicting the likelihood of reoffending.<sup>46</sup> The system, however was found to be racially biased, as it predicted “that black defendants pose a higher risk of recidivism than they do, and the reverse for white defendants.”<sup>47</sup>

42. *Id.* at 301 (arguing that as we move into the future “lawyers will need to oversee, control, review and analyze AI output.”).

43. Kyle Withers, *The pitfalls of AI that could predict the outcome of cases*, Venture Beat (March 1, 2022) (describing various legal predictive analytics software tools).

44. See, e.g., Molly Griffard, *Article: Bias-Free Predictive Policing Tool?: An Evaluation of the NYPD’s Patternizr*, 47 *FORDHAM URB. L.J.* 43 (2019); Daniel Cossins, *Discriminating Algorithms: 5 Times AI Showed Prejudice*, *NEWSIDENTIST* (Apr. 12, 2018), <https://www.newscientist.com/article/2166207-discriminating-algorithms-5-times-ai-showed-prejudice/> [<https://perma.cc/DF3J-QWLF>]; Jack Smith IV, *(Exclusive) Crime-Prediction Tool PredPol Amplifies Racially Biased Policing, Study Shows*, *MIC* (Oct. 9, 2016), <https://www.mic.com/articles/156286/crime-prediction-tool-pred-pol-only-amplifies-racially-biased-policing-study-shows> [<https://perma.cc/WT2S-PTRR>].

45. Cossins, *supra* note 44.

46. *Id.*

47. *Id.*



Microsoft has similarly warned about the risk of racial bias being embedded in its artificial intelligence systems.<sup>48</sup>

The advent of artificial intelligence technologies in legal practice not only will thus transform the future role of human attorneys in the “practice of law,” but also has the potential to shift our descriptive and interpretive understanding of “law” itself. Before the advent of sophisticated machine-learning technologies, legal knowledge arguably was produced by jurisprudential interpretation of descriptive bodies of purportedly objective sources of legal rules (e.g., statutory law, constitutional law, case law).<sup>49</sup>

The advancement of modern machine-learning technologies, however, has complicated the interpretive production of legal knowledge through the reliance of algorithms that rely on often-unstated assumptions about the meaning of a particular body of law. IBM’s Watson artificial intelligence system, as noted previously, is claimed to be able to “ingest[] a corpus of knowledge, curated by experts on any given subject” and then be “trained by being fed a series of question-answer pairs.”<sup>50</sup> Watson’s ability to produce legal knowledge is then “enhanced as humans . . . provide[] feedback on the accuracy of the system’s responses.”<sup>51</sup> What remains unknown, however, are the assumptions made by such human coders about “law” that are used to develop the interpretive algorithms that then produce claims about the meaning of law itself. As Professor Baker notes, “without understanding how the algorithms generate results, it is difficult, if not impossible, for attorneys to vet the information.”<sup>52</sup> It is difficult

48. James Vincent, *Google and Microsoft Warn Investors that Bad AI Could Harm Their Brand*, THE VERGE (Feb. 11, 2019, 9:34 AM EST) <https://www.theverge.com/2019/2/11/18220050/google-microsoft-ai-brand-damage-investors-10-k-filing> (quoting Microsoft’s 10-K Form: “AI algorithms may be flawed. Datasets may be insufficient or contain biased information. Inappropriate or controversial data practices by Microsoft or others could impair the acceptance of AI solutions. These deficiencies could undermine the decisions, predictions, or analysis AI applications produce, subjecting us to competitive harm, legal liability, and brand or reputational harm. Some AI scenarios present ethical issues. If we enable or offer AI solutions that are controversial because of their impact on human rights, privacy, employment, or other social issues, we may experience brand or reputational harm”).
49. See, e.g., Margaret E. Montoya & Francisco Valdes, ‘Latinas/os’ and Latina/o Legal Studies: A Critical and Self-Critical Review of LatCrit Theory and Legal Models of Knowledge Production, 4 F.I.U. L. REV. 187, 201–232 (2008) (describing the central theories of jurisprudence and their role in producing legal knowledge); Margaret Davies & Nan Seuffert, *Knowledge, Identity, and the Politics of Law*, 11 HASTINGS WOMEN’S L.J. 259, 266 (2000) (setting forth a feminist critique of “[t]he dominant view of law is that it can be objectively identified and applied neutrally”); Peter Halewood, *White Men Can’t Jump: Critical Epistemologies, Embodiment, and the Praxis of Legal Scholarship*, 7 YALE J.L. & FEMINISM 1 (1995); Isaak I. Dore, THE EPISTEMOLOGICAL FOUNDATIONS OF LAW: READINGS AND COMMENTARY (2007).
50. Simon et al., *supra* note 39, at 252.
51. *Id.*
52. Jamie J. Baker, 2018: A Legal Research Odyssey: Artificial Intelligence as Disruptor, 110 LAW LIBR. J. 5, 22–23 (2018). Jack Balkin described the dilemma as such: “The AI knows a lot about you,

to challenge racially discriminatory artificial intelligence programs such as COMPAS, for example, as its algorithmic codes are usually deemed proprietary and excluded from outside review by trade secret law.<sup>53</sup>

A central challenge for law schools, then, is to help our students understand how artificial intelligence technologies contribute to the formation of algorithmic legal knowledge, when the assumptions underlying such predictive analytics are not only subject to human biases (racial, gender, and otherwise) but also typically shielded from outside review by intellectual property protections. A handful of innovative law schools have already recognized the need to better prepare students for a future in which law practice will be heavily impacted by machine-learning technologies and have created opportunities for students to learn how to use artificial intelligence legal technologies.<sup>54</sup>

### Conclusion

This essay has briefly examined the potential impact of artificially intelligent technology on the future of both the practice and very meaning of “law.” Law schools play a critical role in both the dissemination and production of knowledge and have a unique opportunity (and responsibility) to re-envision the entirety of legal education to more thoughtfully prepare future lawyers for the new techno-legal world impacted by COVID-19.<sup>55</sup> Whereas the traditional legal model was based in part on the transmission of information and descriptive knowledge (which has now largely been displaced by technology), the new legal model must be based on critical analysis, creative problem-solving, the exercise of independent judgment, and emotive client-based lawyering (which cannot yet be so easily replaced by “narrow” systems of artificial intelligence).<sup>56</sup> The very future of law and legal education may well depend on our willingness to adapt to the new disruptive normal.

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but you don't know a lot about the AI.” Jack M. Balkin, *Lecture: 2016 Sidley Austin Distinguished Lecture on Big Data Law and Policy: The Three Laws of Robotics in the Age of Big Data*, 78 OHIO ST. L.J. 1217, 1234 (2016).

53. Frank Pasquale, *Secret Algorithms Threaten the Rule of Law*, MIT TECH. REV. (June 1, 2017) <https://www.technologyreview.com/2017/06/01/151447/secret-algorithms-threaten-the-rule-of-law/> [<https://perma.cc/6YRC-US36>].
54. See Appendix, *infra*.
55. See Vern R. Walker et al., *Law Schools as Knowledge Centers in the Digital Age*, 88 Chi.-Kent L. Rev. 879, 898 (2013) (discussing the role of “law school as a knowledge center”).
56. See Christian B. Sundquist, *The Future of Law Schools: COVID-19, Technology, and Social Justice*, 53 CONN. L. REV. ONLINE 1 (2020); Susskind, *supra* note 22; Simon et. al., *supra* note 39.

## Appendix

Consider this selected, albeit highly incomplete, list of innovative efforts by law schools to develop the techno-legal competencies of students:

1. Penn State Law partnered with IBM's ROSS program to create a "Legal-Tech Virtual Lab" in 2018. Penn State law students are trained on using EVA, ROSS Intelligence's "free, publicly accessible artificial-intelligence-powered legal research tool." EVA, unlike earlier versions of AI used for legal research, purportedly can "search[] and analyze[] cases based on legal ideas" and subsequently "generate a summary of a case based on a user's substantive question of law, [and create] a targeted overview through 'instantaneous information synthesis.'"<sup>57</sup>
  2. The University of Miami School of Law created its Law Without Walls program as a "part-virtual experiential learning program designed for practicing and aspiring lawyers." Touted as "The Future of Law, today," the program lists as its mission to "(1) create innovations at the intersection of law, business, and technology that solve real problems and address market needs; (2) hone skills in . . . the "Lawyer Skills Delta" . . . and (3) improve the lawyer-client dynamic and promote collaboration."<sup>58</sup>
  3. Stanford created its Center for Legal Informatics CodeX program, in which "researchers, lawyers, entrepreneurs and technologists work side-by-side to advance the frontier of legal technology, bringing new levels of legal efficiency, transparency, and access to legal systems around the world." CodeX projects fall within three different areas: legal document management (which includes "creating, storing, and retrieving legal documents of all types—statutes, case law, patents, and regulations"), legal infrastructure (streamlining national and international standardization efforts), and computational law—"the branch of legal informatics concerned with the automation and mechanization of legal analysis."<sup>59</sup>
  4. Northwestern Pritzker School of Law provides a concentration that aims to train students to use technology in the legal profession. Northwestern argues that "legal practice is changing in profound ways as new technologies—including ediscovery, artificial and machine intelligence, robotics, and cloud platforms—automate processes and provide more efficient mechanisms to manage vast data sets and to predict potential results."
57. *Penn State Law Launches Legal-Tech Virtual Lab with ROSS Intelligence Pop-up*, PENN STATE (Apr. 26, 2018) <https://news.psu.edu/story/518801/2018/04/26/academics/penn-state-law-launches-legal-tech-virtual-lab-ross-intelligence>.
58. Mark Cohen, *How Will Legal Education and Training Keep Pace with Change?* FORBES (Sep. 10, 2018, 6:35 AM).
59. *CodeX*, STAN. L. SCH., <https://law.stanford.edu/codex-the-stanford-center-for-legal-informatics/> [<https://perma.cc/RRM3-3DPH>] (last visited Aug. 8, 2022).

As such, the concentration helps future lawyers to become “skillful and strategic users and consumers of technology.”<sup>60</sup>

5. Other examples of techno-legal innovations include the Institute for the Future of Law Practice,<sup>61</sup> Michigan State’s Center for Legal Services Innovation,<sup>62</sup> Suffolk’s Institute on Legal Innovation and Technology,<sup>63</sup> and Harvard’s Library Innovation Lab.<sup>64</sup>

60. *Technology, Innovation, and Entrepreneurship*, NW. PRITZKER SCH. L. (2022), <http://www.law.northwestern.edu/academics/curricular-offerings/concentrations/technology/> [<https://perma.cc/TT3N-CL3U>].

61. *We Train Legal Professionals to Be Better*, INST. FOR THE FUTURE OF L. PRAC., <https://www.future-lawpractice.org/mission/> [<https://perma.cc/84KS-SCZJ>] (last visited Aug. 8, 2022).

62. *LegalRnD Lab*, MICHIGAN STATE UNIV., <https://www.law.msu.edu/lawtech/legal-rnd-lab.html> [<https://perma.cc/7SXT-SYJJ>] (last visited Aug. 8, 2022).

63. *Institute on Legal Innovation and Technology*, SUFFOLK UNIV. L. SCH. (2017), <https://sites.suffolk.edu/legaltech/>.

64. *Library Innovation Lab*, HARV. UNIV. (2022), <https://lil.law.harvard.edu> [<https://perma.cc/6RCK-3KRN>].