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Transcript

The State of the Art of Artificial Intelligence

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Silicon Flatirons Center for Law, Policy, and Entrepreneurship
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Artificial Intelligence and Legal Transactional Work

https://www.youtube.com/watch?v=ZqHiU-O3xm4&list=PLTAvIPZGMUXM-qNUiETa388qLfZuyRndI&index=1

[00:00:02.32] HARRY SURDEN: Hello, and welcome to our conference on the State of the Art of Artificial Intelligence in the Practice of Law at the Silicon Flatirons Center at the University of Colorado Law School. I'm Harry Surden and I'm professor of law at the University of Colorado, and director of the Silicon Flatirons Center Artificial Intelligence Initiative. We're so pleased to have you here.

[00:00:24.45] Let me begin by thanking the many people who worked so hard to make this event happen, including Amie Stepanovich, Eileen Brown, Nate Mariotti, Sara Schnittgrund, and the rest of the amazing Silicon Flatirons staff, and student volunteers. And also the terrific staff of the law school and leadership and my excellent faculty directors.

[00:00:46.91] It's also a Silicon Flatirons custom to begin by acknowledging the first peoples upon whose traditional land the University of Colorado now sits. So today, we are going to be talking about artificial intelligence in the practice of law. And we have a terrific lineup of experts in this field. And it's important to acknowledge that our goal is to provide a discussion about the state of the art of artificial intelligence in law, but have it firmly rooted in evidence.

[00:01:19.88] And as many of you may have encountered in the world, much of the discussion about artificial intelligence outside of law, in the world generally, often comes with some hyperbole exaggeration and outright speculation. So sometimes this exaggeration or hyperbole occurs because somebody is trying to sell you an artificial intelligence-enabled product or sometimes it's just simple misunderstandings about the underlying technology and its capabilities. Or sometimes it's just about trying to attract media attention or clicks or marketing.

[00:01:56.78] So that is not our goal here. Our goal is to have a discussion firmly rooted in the evidence acknowledging both the amazing capabilities of artificial intelligence, but equally much, its limits. Recognizing its promise when it is due but also being careful not to overpromise and to realize what artificial intelligence can do in the current and near time.

[00:02:23.55] So without saying, let me do acknowledge that today's artificial technology has been capable of many amazing feats outside of law, from self-driving vehicles to language translation. Many of these have been enabled by a family of artificial intelligence techniques called machine learning that involve spotting patterns in data.

[00:02:46.20] But on the other hand, I also want to acknowledge for those of you who do not study the field closely, the limits of current and near-term artificial intelligence-- AI technology. So despite its name artificial intelligence, is a bit of a misnomer today. Despite what the media suggests, today's artificial intelligence is not what is often referred to as strong AI. So strong AI would be the AI of the movies or science fiction where artificial intelligence systems can think at a level that meets or exceeds humans and lots of different ways.

[00:03:22.97] Such an AI system would be capable of arbitrary conversations about any topic or engage in abstract reasoning about philosophy or what have you. And in my opinion, and I do spend a lot of time studying the state of the art and working with the technologies, there is no evidence that we're anywhere close to that in the near term, at least in a five-year time frame or many even several years out. But I think it's hard to project beyond the five-year time frame.

[00:03:54.41] Rather, most modern AI systems while capable of amazing results in certain areas, lack the ability to engage in abstract reasoning or common sense. So just to give you an amusing example, I not that long ago, was testing out the state of the art AI system which is a deep learning system well known to have what's known as 180 billion parameters. So it's said to be very advanced.

[00:04:21.35] And I tested it out with a series of common sense questions that a toddler could answer. So when I asked it a kind of silly question, how many legs do a banana have, to which a toddler would laugh and say, bananas don't have legs, multiple artificial intelligence systems of this variety confidently answered, bananas have 1,000 legs.

[00:04:45.92] And the reason is, a lot of this is pattern-based, and when you ask a silly common sense question like that, no one has ever bothered to write down the fact that we all know that bananas do not have legs, where a toddler would know that. So all this is not to say that artificial intelligence hasn't been capable of amazing feats, it's just that we have to be cognizant of its limits.

[00:05:09.94] So with that in mind, we are going to see some of the interesting feats that have been capable in AI in law, and we're going to-- starting our first panel with a terrific set of panelists looking at artificial intelligence and the use of transactional legal practice. In the interest of time, I am not going to have complex biographies of our expert panelists, but let me say, just introduce them briefly and dive directly into our panel.

[00:05:50.41] Joining me in no particular order is Dr. Jason Adaska who is the director of Innovation Labs at Holland and Hart LLP. Also joining me, Stephanie Curcio who is not only an IP attorney but also the co-founder and CEO of Legalicity-- NLPatent a patent AI startup. And last but not least is Roland Vogl from Stanford University who is the executive director of the CodeX Center-- the Stanford Center for Legal Informatics.

[00:06:30.01] So let us dive right in and let me address the first question to Jason, and then we'll open this up to the panelists more broadly. So Jason, in your view, what are some examples where AI is actually being used successfully in transactional practice?

[00:06:51.38] JASON ADASKA: Great. Great question. Thanks, Harry, and obviously, thanks, everybody, for providing this opportunity to talk to this group. So I think that what's interesting about AI in transactional practices or law in general is that people have been waiting for there to be a big sea change where suddenly AI arrives on the scene. And I think what's actually happening is something that's more of a gradual evolution.

[00:07:17.04] There's been a set of tools that people have used, those tools are getting more capable and they're getting more features, they're able to kind of tackle more complicated problems. But we're not seeing a big phase shift. So some of the things that I think I would point to as being big wins for AI in transactional practice are actually things that people probably don't always point to as being the state of the art most advanced AI.

[00:07:47.43] I'll start with what I think are probably the highlights. Doc review is probably top of the list. So for those that don't-- I kind of know this set of AI tools. If you're in a transactional practice you're real estate, you're doing mergers and acquisitions, a lot of times you're dealing with contracts or sets of contracts.

[00:08:07.35] There are a set of AI-driven tools that can look at a contract and essentially identify portions of it to-- they're relevant for different clauses, in some cases being able to extract information automatically out of it. And they can do this even though there's a lot of variation in what the language is for those clauses, exactly where the data-- where that data lies.

[00:08:32.79] That is built on a set of natural language processing tools that have been around for a while but have gotten increasingly more sophisticated. So now-- there's actually a lot of players in this space, and I've seen at our firm, both the folks doing M&A work, [INAUDIBLE] folks in real estate work, have started to use these tools to be more efficient.

[00:08:55.03] One of the caveats, I guess, I'll add to all the AI tools that I've seen in practice and kind of speaks to your point Harry, about where is the state of the art? Most of these are still very much human in the loop. So we're not having doc review tools that are basically analyzing the contract and spitting out the results directly to a client.

[00:09:18.22] Those are still attorneys or in some cases, paralegals using this essentially to gather information more efficiently to look over a larger set of documents. It would just be very time-intensive. So it's an efficiency tool. Another area that I think is relevant that I've seen people use, is in the area of kind of legal research-- that now we're talking transactional practice and most of the kind of tools that people think about in this space are kind of your kind of case law search where you can find relevant things, not just by keywords but by more kind of semantic queries.

[00:09:59.70] I do a lot of work in intellectual property practice. And there are similar sets of tools for that area. If you're doing a kind of patent work and you want to understand whether a patent that you're working on for a client is novel or not, there are tools that allow you to search across the space of patents efficiently with finding just similar kinds of documents based on what the invention is that your client has.

[00:10:28.95] Similar things on the trademark space, if you want a distinctive mark, being able to search the set of images efficiently, being able to look at not just, does this look the same, but does it have some of the same elements? Does it have an apple? Does it have a bird? Some combinations of those things. The ability to look at text and have that translated to images is not something that's just being used by some attorneys, but there's actually organizations, right?

[00:10:59.19] WIPO, for instance, has a set of tools that they are using, for those that are analyzing trademarks, to see whether they're distinctive, they're being used. So I'd say there's a big space of what I would call legal research that is definitely being used and very successful. A third area that I find interesting in how banal it is but also how impactful it can be. I have yet to meet an attorney that does not dislike having to keep track of billable hours and billing narratives.

[00:11:38.34] There's a whole set of tools again, that are in this natural language processing space that can look at billing narratives and either help classify them or in some cases, help an attorney generate them more efficiently. I've seen both ends of those. I think there's more adoption on the in-house side for larger companies that are trying to kind of get a sense of what their outside counsel are doing where they're spending some time.

[00:12:07.75] There's a whole set of tools that I think are starting to affect transactional attorneys from the client's side that are looking at their billing narratives and they're using AI to kind of classify those. As I said, I think those would be kind of highlight areas, there's a lot of small ones. Obviously, individuals experience AI in large and small ways just in their day-to-day-- you know, you're doing text messages, you're writing an email, and you have some suggestions for completions but--

[00:12:39.61] It's an exciting field but I think it's still very much a human in the loop for the tools that are actually being used.

[00:12:45.21] HARRY SURDEN: Great. Thank you, Jason. So what I'm hearing a lot of our AI being used as sort of decision support systems for humans to make better decisions in large amounts of information.

[00:12:57.03] JASON ADASKA: 100%, 100%.

[00:12:58.23] HARRY SURDEN: Thanks. So let me throw out the same question to either Stephanie or Roland. Just raise your hand and I'll call on you. What are some examples where you're seeing AI being used successfully in transactional practice out there in the world?

[00:13:13.20] STEPHANIE CURCIO: I can jump in and add some comments. So I agree with everything, of course, that Jason just mentioned. And on top of what he mentioned, we are also seeing tools being developed for prediction. So predicting various different things like outcomes or how something will be treated, for example, in employment law, I know of tools that will predict whether a certain individual will be treated more like an employee or an independent contractor.

[00:13:41.06] And I'll give it a certain set of facts. And on the IP side, we do some research in prediction as well. Patent data is very nice to work with because there's so much of it, and it's so well labeled. And being able to analyze to predict whether certain outcomes are more likely is really useful in prosecution-- patent prosecution when you're submitting a patent application to the patent office.

[00:14:10.37] So is it likely that your idea is patentable given various different criteria, is now something that can be somewhat predicted on a pretty granular level, which is really exciting and interesting area of research that we're up to.

[00:14:26.53] HARRY SURDEN: Great. Thanks, Stephanie. So yeah. Patent and IP seems like a real early adopter area of AI. Roland?

[00:14:38.57] ROLAND VOGL: All right. Well, thank you. I think Jason and Stephanie gave a lot of great examples. I would probably add to the good old fashioned AI examples for how law firms are packaging some of their knowledge into expert systems that their clients can use and navigate through a certain area of law or even you go through a legal chat bot kind of experience.

[00:15:12.71] It's somewhat distinct from the data-driven approach-- machine learning NLP approaches of the examples that Jason and Stephanie gave. And then I would also say we see AI used in interesting ways for matchmaking between lawyers and clients. So using algorithms to match the right client with the right lawyer is happening in a consumer facing legal practice but also high stakes. There are platforms that are matching fortune 500 companies with top 100 law firms.

[00:15:58.07] And so those are some of the other areas that maybe are not so much talked about. And then in IP practice, yes, I think that's a pretty-- it's an area of a lot of AI for smart drafting, contextual searching, guided reading, those kinds of things.

[00:16:25.16] HARRY SURDEN: Great, Roland. And I'm really glad that you mentioned good old fashioned AI or symbolic and rules-based AI because it's actually quite a rich and developed area-- artificial intelligence that often gets overshadowed. I think primarily because it's been so successful in its limited domains, and it kind of just blends into the system so successfully that you kind of just ignore it in the background. Jason, did you want to add on to that?

[00:16:53.49] JASON ADASKA: Yeah, yeah. I think that's a great point. I mean, we've seen-- I think this kind of goes under the heading of some technology that's evolved kind of quietly behind the scenes and is not what people tend to think of in the media with AI now. But you know, I've found law is one of the unique areas where that type of AI is really relevant, right?

[00:17:16.85] You know, we've had projects internally that are developing expert systems for different practice areas that are going through some of the same processes over and over. And again, it's around efficiency. But a benefit of that type of AI that actually I think can make it more easy for a lot of practitioners to adopt is the inferences that come out of it are often very explainable.

[00:17:41.95] It's here are a set of rules or regulations and you get a suggestion, and it's not just, hey, it came from a black box but actually gives some description of why that inference turned out the way that it was which for a lot of interns is really important, right? Having something that they kind of understand is grounded in truth, I think is hugely important. So--

[00:18:04.48] ROLAND VOGL: Yeah. I think that's-- just to react there. I think that's a great point, one that we've been giving a lot of attention to. We're researching this area of computable contracts, which is not so much a deployed technology just yet, but it's coming. And also in that context, it's really where the rules approach can give explanation.

[00:18:30.29] So we are looking at that in the context of insurance and people navigating through their insurance policy and asking questions that the-- doing queries that we can sort of directly answer from the computable contract, and give an explanation for why a claim was refused or accepted. So that is what data-driven machine learning NLP, AI is really struggling with and that's sort of like a kind of where the good old fashioned rules-based approach can really--

[00:19:11.46] JASON ADASKA: Yeah. I think it was--

[00:19:13.75] ROLAND VOGL: --close the gap.

[00:19:14.73] JASON ADASKA: From a pure technology perspective, I mean, if you have a law or regulation, you don't have a whole lot of those, right? You have whatever the law is. You have one data point for that. So in some sense, it just doesn't-- something that requires huge amounts of data is just not going to be well adapted to that or at least not as efficiently.

[00:19:36.48] HARRY SURDEN: Great points. So let's shift gears a little bit and I'll turn to Stephanie. So in your experience in what you've seen out there, what are some of the limitations with artificial intelligence in the use of transactional work? And how do you see that manifesting itself?

[00:19:52.64] STEPHANIE CURCIO: Limitations with AI. This is a funny question because I think that a lot of the limitations are actually not necessarily with the technology, but with the user's interpretation of the technology. When we started our company over three years ago, it was sort of an interesting time because people didn't really understand the value of artificial intelligence and practice, and I think that there's a lot more understanding of how to leverage these tools now.

[00:20:20.19] But just to drive this point home, there's a lot of folks that assumed you would be leveraging the technology and inputting some information and then something magic would happen. And the best answer would be popped out before you. Where you can just quickly deliver it to your client and there you go. You can do away with the whole task.

[00:20:42.69] And of course, that's not how-- it's not where the technology is. So I think the limitations really lie in an attorney's understanding of how best to use tools and what you can practically expect from tools. And so I spend a lot of my time trying to elucidate what's happening behind the scenes and how you can make the most out of a tool in your practice because understanding how something works really helps to put into perspective how best to leverage that tool.

[00:21:14.97] So to answer your question in sort of a funny way, I think that the limitations actually [INAUDIBLE] with attorneys and not necessarily with the tools. Because the tools continue to improve and get better, but they're not a human. It's not going to replace an attorney. And in fact, it shouldn't replace an attorney because there's some ethical obligations that you need to abide by in order not to be on the wrong side of some of those issues. So yes, that's my answer to that question, but I'm looking forward to having Jason and Roland's interpretation as well.

[00:21:42.99] HARRY SURDEN: Yeah. That's a great point. I recently wrote a paper on predictive legal analytics. And one of my conclusions is that sometimes tools are actually worse than no tools at all if the data is being misinterpreted and misapplied by people who don't--

[00:21:58.59] STEPHANIE CURCIO: Absolutely.

[00:21:59.09] HARRY SURDEN: --know how to properly handle it. And as we all know that most lawyers are not data scientists or trained in statistics for the most part. So--

[00:22:09.73] STEPHANIE CURCIO: Really. I think that-- you know, to add to that point Harry, and I'm glad that you made that point. I'm aware of certain tools that frankly just don't help your practice and make it actually more difficult. So for example, I've been speaking to folks that are in sort of a translations business-- using AI for translation services. And I would assume that machine translations would greatly reduce the time required for translations.

[00:22:36.06] And in fact, that's not really the case because when a machine translation is presented to a regular human translator, they would see a sentence that might be a little bit awkward but it's not wrong. So they don't change it. But if they were to be the first person to take a pass at that sentence, they would draft it differently.

[00:22:55.66] And so the quality actually decreases slightly because you just leave these kind of awkward sentences that are-- grammatically it's a little bit awkward, but they're technically correct. So yeah, I'm happy that you made that point and I totally agree with you.

[00:23:09.33] HARRY SURDEN: OK. Jason, looks like you have a reaction here.

[00:23:13.35] JASON ADASKA: Yeah. And I guess this is kind of going back to the adoption. Working in a law firm, I can-- Stephanie's comment of people wanting something that just kind of works does everything soup to nuts-- resonates, I mean, what's interesting is I think there-- I found that a lot of practitioners live in kind of a bimodal camp. There's either some that are great skeptics that say, you know what? There's no way the technology can do any of the things that you're saying it can do.

[00:23:43.86] Or are sort of the true believers and sort of are expecting the tool to be able to do everything, right? So they're very hands off and kind of delegated. And the reality is that where the technology is, I think right now is in between and both of those are a little bit wrongheaded, right? There is absolutely some technology that can be-- that can improve the process.

[00:24:05.91] Stephanie's point notwithstanding, right? That there are certainly use cases where a partial solution is actually worse than no solution. But it's also true that there are very limited instances where it can be completely hands off, you know, no human in the loop. But at least for any kind of substantive work. And I think one of the challenges right now with 2021 where is the technology, how can people take advantage of it? Is that that middle ground is kind of where the sweet spot is.

[00:24:38.01] HARRY SURDEN: Yeah. That's a great point Jason, and we see there is an illusion out there about how automated a lot of AI systems are, and we even see this in the era of self-driving cars. A lot of people don't realize they even Waymo's most advanced self-driving cars, they have a call center where there are humans monitoring the driving and help the car get out of trouble. So there's still humans in the loop even when it appears to be totally automated. Roland, did you have a reaction to some of the limitations question?

[00:25:10.70] ROLAND VOGL: Well, yes. So I think it's an interesting debate. I think a few years ago, was this concept of the robot lawyer was sort of like a lot of people's-- up a lot of people's imagination and that concept is sort of like you explained at the beginning this kind of superintelligence, right? A robot that's context-aware and has common sense and I think we are far from that. I think there's lots of narrow, specific, niche applications of AI.

[00:25:53.68] We've been thinking at the center about actually doing a competition to create a machine that can pass the bar exam. It's sort of like, let's set the bar here, and see if it's possible to sort of basically check what the current capabilities are. And I think that would really be an interesting conversation starter

also about the regulation of the legal profession. But what would it mean if we had a machine that can pass the bar?

[00:26:32.59] And I asked a bunch of folks in the space, what do you think? Is that possible? Give them the contract portion of the bar exam and can we create a machine that can pass the say, the contract portion of the bar exam? And a spectrum of opinions is extremely wide even among experts, right? There's some folks on the NLP, ML side who say, well, give me a team of a couple of researchers and within two or three months, we can pass the contract portion of the bar exam.

[00:27:06.01] And then others-- folks like Mike Genesereth, who is on a good old fashioned AI side, he says, well, because the bar exam and the questions that I ask on the bar exam require so much common knowledge, that we would need a complete ontology of the world for the machine to actually pass the bar exam. And I think it's sort of-- that speaks to sort of the limitations, right?

[00:27:32.27] There's a lot of legal areas and contexts in transactional practice where we need to bring in the human common sense to get good solution, and the machines can't do that and won't be able to do it in a long time until we have a complete ontology of everything in the world. And yeah. And that's why-- your example about the banana was very apropos. But anyway, so--

[00:28:04.60] Yeah like I agree with everyone, I think that's very impressive and very useful efficiency creating solutions, but there's no such thing as a robot lawyer.

[00:28:18.42] HARRY SURDEN: And Jason, looks like you have a reaction to some of--

[00:28:21.34] JASON ADASKA: Yeah, I--

[00:28:21.90] [INTERPOSING VOICES]

[00:28:21.98] STEPHANIE CURCIO: I was going to ask for his opinion too.

[00:28:23.91] JASON ADASKA: At least one thing that Roland said on that is, I-- and this is sort of me coming from a technologist background, but what I think is exciting about this space right now is that Roland's example was like, can we create an AI system that can pass the bar? That's a testable hypothesis. And it sounds like you have some folks that are kind of interested in doing that.

[00:28:49.04] I think one of the things that's exciting is there's a lot of areas that we feel pretty certain that an AI is not going to be able to really help with. There's some that we've seen, all right. You can actually do some AI-driven diligence and have something that's helpful. I think that there's a large gray area, and as technology moves, that gray area kind of gets bigger.

[00:29:13.09] One of I think responsibilities for people working in this space, especially that are looking at the cutting edge is to try to be-- to come up with objective ways of answering some of these questions, right? Can we create an AI that passes the bar? I don't know. I mean, I've got I've got opinions. It sounds like-- Roland said, there's a wide swath of people, that's testable.

[00:29:39.12] I think that as we move forward and this becomes a lot-- AI in transactional practice becomes something that's more common. The need for having objective measures of can in any system do x, is really important. Is really important, because I think we can talk about what our intuitions are. They may be totally right, they may be totally wrong, but I think it's important for us to test those things.

[00:30:07.34] HARRY SURDEN: Yeah, that's a great point Jason, having sort of objective measures and as I said, one of the issues in the space is, there is a lot of exaggeration. So one might guess maybe the charitable interpretation is that the scientists who think that AI will be able to pass the bar with enough manpower or visionaries, the uncharitable version is they're trying to attract research funds.

[00:30:31.91] JASON ADASKA: Dollars.

[00:30:32.69] HARRY SURDEN: Right. Great. Stephanie, did you have any reactions to either Roland or Jason's comments?

[00:30:39.98] STEPHANIE CURCIO: Well, what Jason mentioned about objective measures to test certain aspects of AI, that's really hard to do in a lot of circumstances because what is the benchmark? What is the gold standard for a lot of these things? Is it the perfect lawyer or is it some other measure? So this is a challenge that we have all the time being part of the AI space, creating tools. What do we measure it against?

[00:31:07.53] So for example, our AI patent search platform, we first attempted to measure the search platform against USPTO patent examiner as the gold standard. But is that really the gold standard? The examiner is not infallible, the examiners could miss something. Especially when you're searching through a thicket of information and different patent documents might be pulled that are relevant. Are they the most relevant? I'm not sure.

[00:31:34.67] So it's a really difficult measure. Turning then to litigation data, is that the best gold standard? Spending-- a lot of folks that embark on any sort of litigation if they're defending a patent, or defending some infringement suit they will seek to invalidate the patent that's being asserted against them. They will spend tens of thousands of dollars trying to scorch the Earth to find anything possible that would invalidate the patent that's being asserted against them.

[00:32:04.61] Is that really the right measure then to compare an AI system in a matter of seconds that would produce some results that would take normally months and tens of thousands of dollars to uncover? That was previously overlooked by the examiner. So it's a really difficult standard. And I just sympathize with folks out there that are attempting to benchmark these tools.

[00:32:25.79] And the various features are challenging as well. A lot of these tools are iterative. So you get an initial set of results or some outcome from the AI and then the user-- the attorney might input some further information to refine whatever the output may be. So what do you benchmark it against? Do you benchmark it against the original output or do you factor in sort of further attorney input? I think all of these factors are really interesting to consider and making benchmarking extremely difficult to do.

[00:32:57.51] HARRY SURDEN: That's a great point Stephanie, there are a lot of nuances to appropriate benchmarking and getting it correctly. Jason, did you want to follow up on that?

[00:33:06.81] JASON ADASKA: No, I think it's a great point. I think the devil is in the details with all of this. And I think picking-- in other places for AI, people are trying to create some data sets that benchmark performance. I know there's a number of efforts for that in the legal AI space. In fact, I know Stanford, there's a whole lot of NLP and legal reasoning benchmarks.

[00:33:33.71] I think more of those kind of things will help people keep their feet grounded. Stephanie's point, notwithstanding, right? That some of these problems, what people want, what success is is hard to quantify. I think that's a great point.

[00:33:46.88] HARRY SURDEN: Roland, did you have any reaction?

[00:33:48.56] ROLAND VOGL: Yeah, no. I think a few years ago, one of the legal tech companies in contract analytics space did a machine versus a human lawyer contest where they did sort of like-- had their machine run against 20 lawyers, I think, on issue spotting in NDA and not surprisingly, the machine won. But is that really the measure of good lawyering?

[00:34:23.33] I mean, issue spotting is an important aspect of lawyering, but is it all? I mean, is that all that makes a good lawyer? But anyways, I don't think it's-- maybe the question is not like sort of the machine

versus the human lawyer. It's like, how can human lawyers best leverage machine to automate and support their decisions on specific aspects?

[00:34:58.22] But anyway, so that's just one examples for a company to try to do that benchmarking in the contract analytic space.

[00:35:09.26] HARRY SURDEN: All right. And that's a very important--

[00:35:11.04] ROLAND VOGL: But it's very hard. I think Stephanie's point is a good one.

[00:35:14.99] HARRY SURDEN: Roland, that's a terrific segue to our next question, which I'll throw out to you. So part of the idea of artificial intelligence in legal practice that is going to provide you some advantage, make your life easier or better as an attorney. And we've heard from Stephanie and Jason and you as well that some of the advantages might be important but only incremental. So where are you as you survey the landscape seeing AI providing real competitive advantages to transactional attorneys today?

[00:35:49.44] ROLAND VOGL: So I think anywhere where we make lawyers more efficient, we allow them to do the same amount of work in a short amount of time, should be competitive advantage, right? And then that's sort of like ignoring the issue of the billable hour and all that. That should at some point make space for a better model. But there are many examples where AI is effectively used today in transactional practice to make lawyers more efficient.

[00:36:22.99] And the two examples I like in transactional practice is this whole area of-- maybe there are three examples. So the first one is, helping a legal department understand what their playbook is. What is their playbook on negotiating a specific kind of agreement? Some organizations know that and have it explicit, in many organizations, that knowledge resides in the brains of attorneys who've been there for many years and sort of passed on person to person.

[00:37:08.23] There are companies who help legal departments kind of make that explicit and turn it into a computable form. And then once you have that, every time you get an incoming contract, you can automatically do a red line of that incoming agreement, right? And that could be hundreds of pages of agreement and the machine automatically marks it up according to the playbook of the company.

[00:37:40.58] So that saves like many, many hours of lawyer time and it makes the department more efficient and should give it more competitive advantage. And another example, I think, is in contract drafting-- in tech-assisted contract drafting, there are companies out there that help-- lawyers who draft a contract basically see on all the different terms they're using that the operational terms-- see what side of the spectrum, right?

[00:38:23.10] Like what's the most friendly verbiage that's most friendly to their client versus the other party? You know, what do most other lawyers in that comparable situation use for this particular term? Those are very helpful. This is sort of like the practical law company on steroids, right? So bringing in all this data into the contract drafting process, that's very powerful, right?

[00:38:54.69] Like you're not sort of limited to just one template that you found somewhere, but it's a living document that has relevant data for your specific context. And so that's also, I think, a very lawyer-enhancing technology. And it's possible maybe in 20 years, these kinds of technologies become lawyer-replacing. But at the moment, they're solidly in the lawyer-enhancing field.

[00:39:31.97] And there are similar things I think in patent prosecution and even sort of automated patent drafting technologies and sort of-- I think, many other practice areas too. But I think I like those examples because there is sort of a set of instructions and processes and knowledge that live in an organization.

And the AI sort of this process helps us capture that and apply it to sort of the day-to-day kind of work of lawyering and taking the tedium out of lawyering, right?

[00:40:14.31] Allowing the human lawyer to take a sort of more kind of strategic role and bringing more legal judgment and not having to do sort of the tedious kind of write up. And every agreement say, OK, oh, yeah. We never agreed to an arbitration clause. And so here we go again. Those things can be left to the machine at this point in time.

[00:40:39.53] HARRY SURDEN: Great. So Roland, you're saying a lot of these really important knowledge gathering and comparative services is really providing a comparative advantage today.

[00:40:50.54] ROLAND VOGL: Yeah.

[00:40:50.95] HARRY SURDEN: Fabulous. Any reactions from either Stephanie or Jason about where you're seeing competitive advantage in AI today? Stephanie, you look like you've got something [AUDIO OUT]

[00:41:03.57] STEPHANIE CURCIO: Just get me for a second, my AirPods just died. If you can hear me?

[00:41:08.72] HARRY SURDEN: We can hear you.

[00:41:09.63] JASON ADASKA: Yeah, We can.

[00:41:12.94] HARRY SURDEN: Let me-- well, turn over to Jason and then I'll return to you Steph.

[00:41:16.21] JASON ADASKA: Yeah. So I'll react. I actually really-- I thought those were pretty interesting examples that Roland gave. And I kind of want to react to one of them, because I think it speaks to me one of the benefits of AI technologies has been in some ways not that it gives new features, but it makes things that people either want to do or trying to do easier. Here's an example.

[00:41:43.05] So Roland, you were talking about shared language, right? Or shared kind of play playbooks across a firm or across a client team and how now you can kind of synthesize that more easily. So I've, within the firm, have had numerous discussions over the last several years that often go like, we as a group would like to get everything sort of all in one page so that we're using the same sorts of language for all of our different clients because we believe that it would make us more efficient, give a better work product, et cetera.

[00:42:18.81] And in the past, a lot of the approaches for that were not AI kind of approaches, but we're going to do a certain process, we're going to tag every document we have with a particular thing, or we're going to ensure that after an associate gives a draft that they put this file in this folder and tag it "associate" in the right way so that we can find it later.

[00:42:43.88] And it's all of these very kind of work-intensive processes to categorize and label the data so that people can use it later. And I'll say, in my experience, 100% of those things do not work long term, right? Maybe they work for a certain short period of time, but then it's just really-- it's a lot of work, right? And people are busy and there's not really a short term-- there's only a long term benefit to it.

[00:43:11.01] I think some of the tools now, the AI tools that let-- you gather information a lot more flexibly. You don't just have to look for a tag that you decided three years ago was a tag you're going to use for this. You can have it look, give me the language that's semantically similar. Find that across all of our systems. That almost just like ease of use. It's not a new feature. It allows you to do certain things that used to be a very person-intensive process.

[00:43:39.92] And now the technology makes-- it's flexible enough that you can pull those things off a lot more easily. So I agree that there's a competitive advantage in that, it's not specifically AI. I guess, you could do it through other processes but it's more practical with AI systems.

[00:43:55.69] HARRY SURDEN: Terrific. Stephanie?

[00:43:57.74] STEPHANIE CURCIO: Back now so I can answer the questions too. Yeah, I just wanted to throw in sort of an interesting thought experiment. So a lot of people ask us about more high level tasks. Can the AI system start to do more lawyerly functions as opposed to just augmenting some low-hanging fruit?

[00:44:18.62] And that is a really interesting question, and I just wanted to throw out that in our experience, we're not quite there yet in terms of [INAUDIBLE] practically or commercially useful because of the reasons you discussed through your banana example, and Roland also elaborated on lacking sort of human intelligence is a really big factor in being able to perform more high level-- sorry, more detailed tasks that would be more high-functioning tasks like drafting patent applications, for example.

[00:44:52.38] So there's some talk in our space to leverage some of the latest developments in NLP technology to have an AI system take some description of an invention and draft a set of patent claims. And although it sounds really cool and it would be awesome even AI can do that, lacking that just common sense is actually a huge factor in being able to make a useful practically applicable tool. So I just wanted to add that limitation to some of the more useful augmenting tools that are currently available that Roland and Jason covered.

[00:45:31.37] HARRY SURDEN: Great. Thank you. And in a minute, we'll turn to questions and we always start out with a question to a student. So students who are attendees in the audience, I hope you'll be lining up your questions while we're thinking about it. Our last question just briefly in a couple of sentences. What do you see is the most exciting areas of AI growth in legal transactional work looking forward based upon what we see today? Just raise your hand if you want me to-- OK, Jason, go ahead.

[00:46:06.15] JASON ADASKA: I'll go. I mean, I'm personally impressed by the advances in NLP, specifically these large scale language models. They're not ready for what people want them to do, especially on the generative side but they've actually been moving pretty quickly, and I'm excited to see where that technology goes.

[00:46:25.77] HARRY SURDEN: Great. Particularly the Muppet models, BERT and ERNIE?

[00:46:28.47] JASON ADASKA: Muppet models or Megatron, I guess, is the newer ones now. These gigantic language models that are able to learn off of patterns from huge corpuses of data. I think kind of unleashing those in different law firms to read all their documents and kind of see what you can do with models trained like that. I think that that's an exciting growth area.

[00:46:54.35] HARRY SURDEN: Stephanie, where do you see exciting growth?

[00:46:57.41] STEPHANIE CURCIO: Well, I would be remiss not to mention the area of research and the company that I co-founded three and a half years ago. In [? search, ?] but specifically applicable is just what Jason mentioned. When we started the company three and a half years ago, some of the technologies that we use to build the initial version of our product are pretty outdated now. And that wasn't that long ago.

[00:47:21.49] So the rapid pace of change in the space and the advancements that we've seen are just absolutely incredible and taking a task that was traditionally quite a tedious task and being able to accomplish that task with such great accuracy has been something that I've seen improve over time and improve quite significantly. So I'm really excited to continue to see where it goes.

[00:47:52.67] HARRY SURDEN: Roland, what do you mostly [INAUDIBLE]?

[00:47:54.49] ROLAND VOGL: I think the BERT and GPT NLP models, those are exciting. We saw our fellow and one of the-- I mean, is a VP of research at [INAUDIBLE] present some of the use of it at our

future law conference this past year. That was exciting how you could see how the machine can actually start to understand the concepts, right? Not just the key words but it sort of appears to have an understanding of a concept.

[00:48:27.16] And that was I think quite interesting. And it'll be exciting to see where this going goes in transactional practice. But for me, we've sort of doubled down on a research effort on computable contracts. Contracts that are automatable and operationalizable. Specifically we are focusing on the insurance industry. We feel there's lots of areas where there's sort of different bargaining power, information asymmetries, we feel like that technology can really empower consumers to better understand their rights in contracts.

[00:49:11.35] And I think that's an area that I'm excited about, but it's sort of early days in that space and it's not sort of like quite available just yet.

[00:49:25.42] HARRY SURDEN: Yes. That is exciting, computable contracts. And I will be working with you shortly.

[00:49:30.98] ROLAND VOGL: Yes. You started the whole field with your seminal paper 10 years ago. So--

[00:49:37.52] HARRY SURDEN: Well, thank you. Let me turn to a student question. Nick Matera. Hello Nick, thanks for joining us.

[00:49:45.41] NICK MATERA: Hi, professor. Thank you everyone for such an interesting panel so far. I just wanted to revisit something you said, Jason. You discussed the challenges of hand-entered data tagging. Something I've done before and it seems like AI presents an opportunity to streamline this task and a lot of these menial tasks like that. That doesn't seem obvious to a lot of average law firms.

[00:50:10.11] And do you have any idea what the current or future landscape to the increased technological literacy or familiarity with these AI tools for the average lawyer would be?

[00:50:19.85] JASON ADASKA: Yeah. That's a great question. And obviously, it depends a lot on kind of the culture in different organizations. One thing that I've kind of found effective-- because I work very closely not just with the attorney practitioners, but entire client teams. Often, especially for some of the kind of administrative tasks, the best place to start to get kind of technology adoption is more on the administrative-- the paralegals, the people who are having to do those menial tasks.

[00:50:53.03] I found ironically, people sometimes think, if you go to somebody who's working as a support staff or attorney and say, look, we've got an AI that can do portions of the work that you're doing right now, that there would be pushback, I found the exact opposite true. Most of these people are overwhelmed with a huge amount of work and are happy to get any kind of assistance.

[00:51:18.43] So I mean, I think the trajectory, it seems most likely to me for a law firm environment, is tools that kind of help the administrative staff work more effectively. That is a great entry point to grow to other tasks as well. And there's a lot of great technology in that space that's kind of coming on line now to do exactly these things.

[00:51:43.66] HARRY SURDEN: Any other reactions to the next question? OK. We've got another question from Krister Kroll.

[00:52:01.92] KRISTER KROLL: Hi. I'd like to direct the question around, most of these are repeatable workflows that we're talking about today. Things like paralegal work. Where are the places where AI actually outperforms human performance, where does this actually augment practice in ways that we can perform as humans?

[00:52:23.63] ROLAND VOGL: I would say, I mean, the first thing that comes to mind for me is just this whole area of prediction, right? This area of like predicting how a judge will decide or how a patent examiner will decide. You need just to process a lot, a lot, a lot of data points that humans can not process normally to see patterns and make a prediction. And so I think that's what I would say sort of spontaneously.

[00:52:52.00] STEPHANIE CURCIO: I'll add a point with search. We find often when I speak to clients that they use our tool for five minutes and they uncover some incredibly relevant piece of document that could potentially invalidate whatever invention that they're seeking to invalidate that they would never have found on their own. And that's because of the technology that we're employing doesn't rely on traditional techniques.

[00:53:19.34] So it's approaching the problem in a completely different way. So it's able to surpass what would be normally capable of a human being. So absolutely, we're seeing that in the search space.

[00:53:33.23] HARRY SURDEN: Jason?

[00:53:34.13] JASON ADASKA: Yeah. I'll just add. It's an interesting question because I think there's at least two dimensions to this, right? One, I think you're kind of asking a little bit about quality, right? What can a computer do in terms of making a decision that outperforms what a human can do? There's also a dimension here in time which is in some sense maybe part of what goes into Stephanie's example.

[00:53:58.55] So if you ask the question, give a human infinite amount of time to review a set of contracts, they probably can go farther in terms of quality than AI systems right now. But if you time constrain it, I think there's probably a lot of tasks. There's probably huge number of tasks where computers outperform people just because they can read a lot faster and look across a lot set of data. So that's a real discussion I think that people are having inside of practices is, where is the trade off, right?

[00:54:28.85] Not just, are we going to maximize quality to a gazillion degrees. Most clients don't necessarily want that, right? Got even if they want humans doing it, they've got a budget. So I'd say, the more time-constrained probably the better machines are doing right now.

[00:54:45.29] HARRY SURDEN: Yeah. Those are all great points, and I'll add on that I think, a principle is, where there's large amounts of data that would be too time consuming or cumbersome for humans to look through, computers can outperform it. And a really good analog outside of law is credit card fraud detection. No human could possibly look through millions of credit card transactions and spot fraud, whereas it's trivial for a computer to spot fraud in this way.

[00:55:13.43] And there are analogs in law when it comes to things like document review and things of that nature, which we'll actually touch on in the next panel. So great question Krister, thanks so much. We've got-- Oh, go ahead.

[00:55:27.90] KRISTER KROLL: I was just saying thank you.

[00:55:29.36] HARRY SURDEN: Oh, thank you. We've got another question. Where and how do we see AI education being introduced into law school education?

[00:55:41.12] STEPHANIE CURCIO: I think that's--

[00:55:41.90] [INTERPOSING VOICES]

[00:55:42.23] STEPHANIE CURCIO: --for you Harry?

[00:55:44.27] HARRY SURDEN: Yeah. So I mean, I actually do teach a course on AI and law, but it's definitely not common because it's more incipient. I think, where I would like to see a little bit of education to Stephanie's point, is to attorneys who are going to be using these systems to become more

educated consumers of these systems in ways that they can properly interpret and contextualize the results and also its limitations.

[00:56:10.28] And also understand things like the distortions that have gone into the data or the model might be kind of skewing them outside. But Roland, you also teach a class on AI and law. So I'd love to hear your thoughts.

[00:56:24.70] ROLAND VOGL: So I think many law schools around the world are asking themselves that question of how do you prepare sort of the next generation of lawyers for this kind of changing marketplace? And there are different models out there. So one is, we need to integrate the tech into all the core subjects so that in contracts class, you will also learn about computable contracts and in your patent class you'll learn about patents analytics.

[00:56:59.09] And/or you have a core course on AI and law. And may times, it's easier for law school faculties to think about the law of AI questions. What are all the interesting legal and ethical issues raised by AI rather than building tech to do legal things and the legal tasks. So anyways, I think we see quite a bit of experimentation at law schools. And I think some of it is like the course I'm teaching with Mike Genesereth, it is for folks who are like builders, they want to build stuff.

[00:57:44.87] Brings in computer scientists and law students and it's project-driven. And there's some experimentation on sort of breaking out-- and that's usually as small as maybe 20% of the student population. But you need to reach the remaining 80% and I think for them, I think it's like kind of-- to Harry's point, it's like really make them good users of the technologies that are out there.

[00:58:09.92] Make them understand, work with data better, and becoming better consumers, I think that's a good way to put it.

[00:58:23.03] HARRY SURDEN: So we're just about out of time. Jason or Stephanie, you want to have some final words?

[00:58:30.55] JASON ADASKA: At least for the training, I think that's a tough problem. The technology is moving pretty quickly. So I think some understanding of first principles probably helps keep up with the times as the implementations change.

[00:58:47.44] HARRY SURDEN: Stephanie?

[00:58:48.05] STEPHANIE CURCIO: Yeah, I'll just add that I think that it'll be driven by the next generation of lawyers. A lot of the change will be driven by the next generation of lawyers. I was recently speaking on a panel that perhaps some of you were also speaking on. And we heard from one of the private practice attorneys that students come up through the law school and enter into private practice expecting a certain level of automation.

[00:59:17.37] Especially, if they had some sort of career in engineering or some other field before starting their legal career and they're just gravely disappointed by how manual a lot of the tasks are in the legal profession and shocked, frankly. So it's sort of up to you students to change a lot of these. Drive a lot of the change and not to put any pressure on as you enter into your final exam shortly. But that's all I'll add.

[00:59:45.48] HARRY SURDEN: Well, we are out of time but I want to thank Jason, Stephanie, and Roland for a terrific discussion about AI and legal practice grounded in reality, which is what we were looking for. So thank you so much for joining us. We now have a 15-minute break. We'll be returning at 15 after the hour for our next panel. But thank you for-- panelists, you guys did an excellent job.

[01:00:08.54] ROLAND VOGL: Thank you. Thank you Harry.

[01:00:10.44] STEPHANIE CURCIO: Thanks so much.

[01:00:11.07] JASON ADASKA: Thanks so much Harry, thanks, everybody.

[01:00:12.33] ROLAND VOGL: See you all. Bye-bye.

Artificial Intelligence and Litigation

https://www.youtube.com/watch?v=NE8HkYo6UZg&list=PLTAvIPZGMUXM-qNUiETa388qLfZuyRndI&index=2

[00:00:00.60] HARRY SURDEN: Welcome back. Let us start our next panel, which we'll be exploring the state of the art of artificial intelligence and litigation. So joining me are really accomplished an expert group of panelists. In the interest of time, I will be only providing brief introductions but I recommend that you look to their very impressive accomplishments which are linked on the conference website page.

[00:00:27.40] So joining me are Dr. Maura Grossman who's a research professor at the David R. Cheriton school of computer science at the University of Waterloo. Also joining me, Daniel Linna Jr, who is a senior lecturer and director of law and technology initiatives, at the Northwestern Pritzker School of Law and McCormick School of Engineering, and last but not least is Rebecca Wexler who's a assistant professor of law at University of California, Berkeley School of Law and also the faculty co-director of the Berkeley Center for Law and Technology.

[00:01:04.27] So thank you so much. I'm so pleased to have such a great group of panelists joining me in this really interesting topic and if you were there at the last panel and even if not, I explained to our audience how our conversation aims to be rooted in the evidence of artificial intelligence. We're trying to be free of hyperbole and exaggeration and really focus on the actual and current state of AI both where it is excelling but also in light of its limits with respect to abstract reasoning and cognition and what have you.

[00:01:43.38] And somebody who's really done a lot of interesting work in this area is Maura Grossman. So I will turn and ask the first question to Maura and then we'll open that same question up to the rest of the panelists. So Maura? Let me ask you where are we seeing artificial intelligence gaining a foothold in litigation today?

[00:02:05.42] MAURA R. GROSSMAN: I think it's helpful for us to look backwards first and review the history of how machine learning first came into litigation. In December 2006 there were amendments to the Federal Rules of Civil Procedure that introduced the term Yes or electronically stored information and e-discovery became a thing. The volumes of data were increasing beyond what law firms and lawyers could handle in a typical litigation in discovery to review them. Perhaps back then a large case was 35,000 documents today it is very easy to have 10 million documents or more.

[00:02:54.39] And in the 2007 or so time frame there was the birth of something called the trek legal track which was run through the National Institute of Standards and Technology. There the folks in D.C. who measured things. So if you go there, you can see the official ruler and the official pound, the best Kevlar vest that that's most bulletproof and so forth and Jason Barron and a few others approached the National Institute of Standards and Technology to help with looking at and measuring search methods.

[00:03:38.90] And I first became interested in the use of supervised machine learning to distinguish between relevant and non relevant documents using labeled training examples where the algorithm learns to distinguish the features between relevant and not relevant. But how do you convince others when they think you're on crack? And aren't inclined to believe you that this stuff works. So we decided to do an empirical study. And we worked on that from 2009 and on and it was eventually published in the Richmond journal in 2011 where we first coined the term Technology Assisted Review or TAR and we showed it could outperform attorneys at finding relevant documents both in terms of efficacy and efficiency.

[00:04:36.47] In 2012, the first federal and state court cases accepted the use of tar. And now we're in 2021 and it's been a decade and adoption has been slow. Tech has definitely improved, especially with the uptake of what's called continuous active learning or TAR 2.0, but there's still resistance due to concerns

it won't find the smoking gun that producing parties will game the technology by mis-training it, or small coding errors will lead to disaster. There is discomfort with loss of control we know lawyers are control freaks, and loss of money by law firms and service providers.

[00:05:22.62] So there's some unwillingness to learn how the tech works and a lack of desire sometimes on the part of producing parties to even find bad evidence. So the incentives are completely misaligned. But today the fights are no longer about whether the tech works and a party can use it. I think adoption has increased although it's still not ubiquitous. The fights are over process and evaluation of the results and I think the industry has failed to take science and statistics into account properly, which I find really disappointing. And the case law has simply not developed in the most empirically sound or valid way but it is here and it is pretty entrenched.

[00:06:14.76] HARRY SURDEN: So it sounds like you're seeing the technology of electronic review really improve over the years and perhaps even meeting or exceeding attorneys in many cases but the incentives are not really aligned for this to gain widespread adoption. In some cases.

[00:06:33.63] MAURA R. GROSSMAN: I think that's true or at least as much adoption as I would have liked to see after a decade.

[00:06:39.27] HARRY SURDEN: Great. Dan, do you want to react to the question about where you're seeing artificial intelligence gain a foothold?

[00:06:46.05] DANIEL W. LINNA JR: Sure. And so I just kind of jotted down some notes I think where we're seeing some-- I mean it depends how you define foothold right we're seeing tools we're starting to see them used if more is not that bullish about adoption of discovery then I suppose I can't be too optimistic about these other tools, they're not being used as widely at as e-discovery. But I think we could look at AI first of all, thinking about this litigation ecosystem is something I'd like to talk about, because I think sometimes we focus too much on point solutions and don't think about how the whole ecosystem is evolving and will continue I think to evolve over the next few decades.

[00:07:19.62] We can look at the way AI is helping attorneys that's mostly I think what we'll be talking about today. But there's AI helping individuals? Or maybe even legal departments, AI being used in courts, and AI being used in the administrative state I think we could look at as well. But for AI for attorneys discovery is the most prominent example. Legal research actually may be is maybe actually even more broadly used of course, a lot that's kind of not necessarily so visible to the users but we see more and more tools where AI is really improving legal research tools.

[00:07:53.52] But I think we're seeing more and more drafting tools as well. Tools that given a complaint can draft an initial answer to the complaint that can draft discovery requests, responses to discovery requests, motions in briefs. And I think we'll see those tools continue to be used more and more and get better and better. And analytics, a lot of times people will lump in that bucket I think we're going to talk about that a little bit later but we're seeing more and more use of descriptive analytics and even building some models to predict costs and outcomes.

[00:08:26.88] On the AI helping individual side we're seeing more and more development of expert systems helping with a wide range of problems. Some of this can be in legal aid organizations but then there's big law firms as we heard on the prior panel, I liked hearing all the discussion about good old fashioned AI and rules during systems I mean, a few years ago people seem to think. Rule those out. And I completely agree with the prior panel that there's a ton of work that we can do they're creating in the legal aid space, we see tools for bankruptcy, divorce, landlord tenant, but in the big law space there's a lot of opportunities.

[00:08:58.98] We see here in Chicago there's a tool for tenants helping them in landlord tenant disputes it's called rent prevention and it's a chat bot. So it's got a foundation of rules but then it uses natural

language processing. So that when different queries come in to try to match them with the right sets of question and answer pairs. We're seeing more and more use of AI in courts in a lot of different ways. I think the online-- the rise of online dispute resolution is really going to change the way we think about litigation and a great example is the British Columbia civil resolution tribunal. There's a lot less focus there than on adjudication, it's more about empowering the parties helping them understand their rights and responsibilities and resolving disputes without attorneys right in the vast majority of these cases that's without attorneys.

[00:09:41.34] And then we can see the administrative state more and more use of algorithms. There is examples like adjudication of social security disability benefits, one Yes there is this idea of easy grants, can you create an algorithm to kind of identify cases where-- this is absolutely we should grant benefits here and the person shouldn't have to wait eight months or however long it is. But then also seeing AI and algorithms being used for regulatory enforcement such as by the Securities and Exchange Commission. I think we're seeing a lot of activity, a lot of areas, and it might not look like adoption is taking off just yet but I mean it's I think we're at the slow growth kind of stages for a lot of these tools.

[00:10:20.98] HARRY SURDEN: Yeah Dan thank you that's a great perspective, and I really appreciate you. Surveying the ecosystem because I think that's a really important way to look at it and one theme I'm hearing from both Maura and you is that attorney can actually gain competitive advantages by adopting relatively simple, it doesn't have to be that fancy technologies that have proven themselves whether it's e-discovery or even basic predictive analytics and I think that's the case and maybe more attorneys will move in that space. Rebecca let me turn it over to you. Do you have a reaction to where you see artificial intelligence taking hold in litigation?

[00:11:00.47] REBECCA WEXLER: Yeah Thanks. Thanks so much for organizing this and for having me really excited to be here with the other panelists and I know later on in the panel we're going to do a deep dive into evidence issues and predictive tools. So I'm not going to talk about those here. So just in reaction to what Maura and Dan just said, one of the things I'm not seeing is the adoption of AI assisted discovery in criminal cases. And I've wondered why for a long time-- and it may be something that Maura said in the Civil you've got this huge expansion of the volume of documents and in criminal there's a lag.

[00:11:35.27] I think in that nonetheless criminal cases are starting to struggle with document dumps that may be even there could be challenges to Brady disclosures if the prosecution, has handed over. 10 hard drives worth of content without a map as to what might be most pertinent to the defense that could overly burden defense counsel's limited resources and kind of be a for practical purposes obstruction of the relevant disclosure of information the prosecution is obliged to provide.

[00:12:04.86] So I think there's an opportunity there to Harry's point that maybe we could even gain some real advantages in fairness and efficiency and accuracy just by starting to import some of the tools already developed in the civil space into criminal. But to kick back a question to the three of you, you know more about the TAR technology than I do. What do you think are some of the-- we don't have to answer this if it gets out of our order. What do you think are some of the reasons why it's not being adopted in criminal even to the extent that it has been in civil? Is it is it this volume of documents problem where you have to have a certain amount of documents in order to make it pertinent no so that's a good I see Maura shaking her head that's good news for criminal cases, what might it be?

[00:12:50.26] MAURA R. GROSSMAN: Cost.

[00:12:51.90] REBECCA WEXLER: Sorry cost.

[00:12:52.67] MAURA R. GROSSMAN: Cost Yeah.

[00:12:54.93] REBECCA WEXLER: Well it's all expensive?

[00:12:57.01] MAURA R. GROSSMAN: Yeah well that's a really good question. Because it is often charged at a per gig price based on volume. And so the savings is significant probably once you get over 15,000 20,000 documents something like that. It can be used on smaller cases but for the most part you have to look at what am I going to save on the document review versus what am I going to pay for processing, hosting, and often not always paying for the switch for the analytic tools. Sometimes they're included sometimes they're extras.

[00:13:44.90] So my guess is that the driver is probably cost especially for public defenders or solo attorneys who are defending somebody because maybe in the White collar cases it's being used a lot more, I think it was definitely used at the firm I was at for white collar. But not so much for individuals because my guess is cost driver.

[00:14:09.70] REBECCA WEXLER: Really interesting. Oh sorry.

[00:14:11.75] HARRY SURDEN: Oh I was just going to ask more I think that's fascinating. Is it your impression that the cost has to do with the special requirements of law versus other areas of machine learning where you don't have to be quite as careful in terms of privilege and security about data say when you're analyzing images or could the costs come down and they just haven't for various reasons do--

[00:14:35.80] MAURA R. GROSSMAN: So come down as it becomes more commoditized. It doesn't cost any more to search a million documents than to search 70,000. It really does and in terms of the machine learning. It may cost a little more to host it but there's margins here. And it just hasn't commoditized enough to come down, you were starting to see the entry of players smaller players who are gearing towards modest size cases and smaller cases, and I think with time I think it's going to be embedded in all of the tools and it'll just be there. But I think that's primarily it.

[00:15:19.03] HARRY SURDEN: Dan, did you have a reaction to that?

[00:15:21.94] DANIEL W. LINNA JR: Well no I think it's a great set of questions and I hope the cost does continue to come down, and I think Rebecca is the expert in this area but my sense is that there are tremendous opportunities for us to think about how to use technology tools for public defenders and for other folks that we can really improve criminal justice and I'd love to see people like all of us inside of our universities working more on this too, right, to help contribute to that.

[00:15:46.63] REBECCA WEXLER: I second that. And I just to jump in and think maybe one solution in the subacromial space would then would be who bears that burden of cost? Because it is the prosecutor is a repeat actor and to the extent that say a slew of misdemeanor cases, the prosecutor is going to be getting say 100,000 misdemeanor cases maybe they've got repeat facts and this could scale and be efficient if we impose that cost burden on the repeat player.

[00:16:10.72] MAURA R. GROSSMAN: Yeah the challenge is not all prosecutors have access to this either. I mean I know SEC and some of the DOJ units do but I don't know if line prosecutors do in regular cases, they may very well in big antitrust and will they do in antitrust and those kind of cases but smaller crimes not so much. So it's not on either side.

[00:16:40.90] HARRY SURDEN: Yeah so this might be a real realm of improvement where we could unleash some benefit if we lower the cost and access issues fascinating. So on so in the last panel and we spent a lot of time on focusing on the limitations of AI, making sure that we're not overpromising or exaggerating. So let me throw this out to Dan first and then the rest of the panel initially, what limitations are you seeing about AI use in litigation where are there promises that are exceeding reality?

[00:17:17.01] DANIEL W. LINNA JR: Yeah I think it's a really interesting question because there is some unreasonable hype about some of these tools. And I think that we see kind of high level articles

sometimes written about robot lawyers and robot judges. And then I think we tend to focus on the hardest versions of problems like robot judge and what's it going to be like with the robot judge that replaces a jury in a murder trial and it's like, well slow down. I mean I think there are a lot of other areas where we might use technology for lawyering or in judicial processes that might automate or augment things.

[00:17:51.15] I think there are actually a lot of possibilities. If you think about a robot judge in a murder trial seems very fanciful right now but what about for a traffic ticket? Or what about for a landlord tenant dispute? And you know so I think we need to get more specific about some of these questions and start asking really like really thinking more about what's possible and where can technology help us improve the legal system? Help us improve rule of law and access to legal services?

[00:18:21.33] And I think one example is as you mentioned autonomous vehicles in the opening Harry and you think about the billions of dollars that have been invested in creating autonomous vehicles. And we're nowhere near that sort of investment in creating legal technology tools and I think there's a real University research gap in this space as well. I think you look at some of these other areas the way universities have contributed research to advancements on autonomous vehicles and other areas. And I think that's again another area where I'd like us to see us do more in universities to contribute to developing these tools for legal services, for legal systems, and thinking about how the law might be represented in the future.

[00:19:00.49] And so I think that-- to some extent to me some of the biggest obstacles that we face are our thinking too small and then at the same time magical thinking. And I think a lot of the ways that we're trying to use AI right now is kind of like these point solutions and trying to automate things the way we've always done them. So that's only going to get us so far, and I'd really like us to see us talking more about really having a vision for the future and thinking about what these systems could look like? What's legal services delivery? How are we going to disseminate legal information? What a legal services look like in a digital world that we see emerging?

[00:19:37.83] And then if we can have a better vision for what the future might look like, then we can better identify the obstacles to us getting there and doing that. Now so at the same time, though, I think though this magical thinking right AI is magic we can just throw AI at some of these different problems, you know it requires more than just purchasing technology tools whether you're in a law firm, legal aid department, or anywhere right? And I really think we need to be having more of a people, process, data, and technology approach thinking about that ecosystem, and then helping us like develop be rigorous about developing this roadmap of the research that would make it possible.

[00:20:16.59] And just so thinking about people, process, data, and technology is going to briefly mention just kind of each of those where I see so data right? So today we can say like AI it's a data problem, we just we don't have the data, there's confidentiality, we can't get the court data. You know I think that we haven't even really spent a lot of time thinking about what data we need. And sometimes some of the different projects that are done are kind of like well here are some data available, what can we do with it? And that's kind of a backwards way to go about it.

[00:20:44.80] So I think we need a lot more thinking about what kind of data we need to be able to develop the kind of tools that we want to have, and how do we get quality data? Which I think is a big problem. That leads to the process problem. I think we lack standards and best practices in many areas of law. This came up a little bit on the prior panel like how do you measure the outcomes? I love that this came out right this is something I've been doing a little bit of research. If you get something that a machine generated a draft, then a lawyer wrote a draft of an answer to a complaint what's the quality of them? What are the standards? How do we measure the quality of different things?

[00:21:20.17] If we can't measure the work that's done by lawyers how could we evaluate the outcomes that are produced by technologies? And I think that so part of this will be-- as we're putting these technologies in place, I see more and more work that's being done legal operations is really growing and people are really thinking about how is it that we solve problems? What are our processes? What's the work we do? So we're moving from being artisans and craftspeople to taking on more of an engineering and scientific approach.

[00:21:46.95] And of course as that starts to happen as we see more standards and best practices it starts getting easier to use technology, it starts getting easier to automate things, to augment things. Richard Susskind talked about this for a long time like kind of moving from bespoke, to standardized, to systematize, to commoditized. So I think that in this ecosystem we're going to see more of that some of these problems that look really hard will start to get easier to solve as we take this more disciplined approach.

[00:22:13.80] And then people right we got we got to train lawyers, lawyers need new skills. I think in this ecosystem, not just learning about technology but learning about project management process improvement, computational thinking and data analytics, leadership change management, Learning about how innovation occurs, and then we need more and more of other professionals coming into this space, not just technologists, but also project managers, process improvement experts, data scientists, and then thinking more broadly about technology.

[00:22:40.56] Right? Like I said earlier I was thrilled that the prior panel talked about more than just like machine learning and deep learning and transformers but talking about good old-fashioned AI, talking about the other ways in which technology just basic technology as the power to transform courts and legal systems. So I think if we have this vision for where we're going or what we're really trying to accomplish and we take this people, process, data, technology approach.

[00:23:04.44] Then I think it'll make it easier for us to really understand, we talked about being evidence based and measuring things and things like that, well then how do we really understand? What are the obstacles? And how do we start focusing on how to overcome them? Kind of like one brick at a time, building this foundation for this future that we want to have?

[00:23:22.71] HARRY SURDEN: Dan? Those are some really great points so thank you for that perspective. And a few points I want to highlight there I think are that a lot of us can relate to what the role of universities in kind of spurring this kind of basic research out there and making sure if there's access to justice or other issues that we take on that cause because they may not be as likely to be solved by the private sector out there. And also this idea which I'd love to hear the panelists thought about the data bottleneck in law thinking about what data we want? And how to get representative data not just the data that happens to be accessible.

[00:24:01.30] One of the issues in law which I know you Dan and I have spoken about before is this idea that a lot of legal data that could be subject to useful practices out there to help society are protected by secrecy and confidentiality agreements in ways that you don't necessarily see outside of law in areas. But let me see Maura or Rebecca have reactions to the either Dan's comments or just questions about the limitations of AI?

[00:24:31.48] MAURA R. GROSSMAN: Sure? I'll start. One of the challenges I think in this area is the following. If I want to go buy a refrigerator, I can get pretty good information from Consumer Reports or something else about the quality and sort of standard comparisons. If I want to buy any discovery tool, there is no Consumer Reports. It's complete Wild West and that I think applies to most of these things which was Dan's point.

[00:25:03.42] You're getting something that drafts responses answers. How do you know it's any good? And I think it becomes very hard for the user to distinguish good tech and process from poor tech and process. And I think that's compounded by the fact that most lawyers don't have a good understanding of measures of evaluation and they will see something that says 99.9% accurate and have no idea that they need perhaps to look at false positives and false negatives and different kinds of errors.

[00:25:44.10] And I've seen all kinds of misrepresentations of metrics I'd like to think is accidental rather than intentional. But to the average lawyer if you say the recall being what of the documents are found, the recall is really 49% plus or minus 20% margin of error, their eyeballs start to go back in their head and the vendor tells them it's 70% plus or minus 2% and they buy it, and they have no capability of analyzing those representations.

[00:26:25.42] HARRY SURDEN: That's fascinating. So do you see a role for intermediaries here like the Consumer Reports of legal analytics or what is your thinking in that area Maura?

[00:26:37.18] MAURA R. GROSSMAN: Well, it's hard to do that I think track tried to do that kind of standardization at least a revaluation, but often providers don't have the incentives to come because they can be found to be worse than the guy next door. I was hoping that the judges would do it, but they have a hard time with the technology in any one matter may not justify the kind of downward hearing you might need to get to the bottom of what works or not. So you have a busy judge and two competing experts and they don't know what to do.

[00:27:17.69] And so it's a real problem but setting up an independent entity you can get sued, so you can get sued a lot, my understanding is Consumer Reports get sued an awful lot so you need a huge legal department with a lot of money that's prepared to deal with those lawsuits when they come in.

[00:27:39.13] HARRY SURDEN: Yeah so, perhaps this might be another place where universities could play a role as some sort of trusted intermediary. Rebecca, do you have any thoughts either to Maura or Dan's questions or the original question?

[00:27:52.51] REBECCA WEXLER: Yeah, well I want to echo the emphasis on universities as solving market problems because one of the limitations I see on AI in the subacromial space is specifically how distorted the private sector is the development of the tools. So there's distorted access to data and there's also distorted incentives to develop the technology is based on who's going to pay for them? And who's going to buy them?

[00:28:16.67] So if the prosecutors, the government are the paying customer, then we can expect that any errors reliability flaws in these technologies are likely going to be less court, less observed, less corrected, when they favor the prosecution's interest. And so universities might be a place where we could say, hey, let's start developing technologies and designing technologies that are specifically aimed at serving interests of innocence for example, rather than serving investigations of guilt. If the market's not going to make those tools maybe the University could.

[00:28:54.34] And then I saw some questions in the Q&A so just how reliable is data and police reports as an example it really depends on what the data is, but race data in police reports super unreliable. We don't know whether it's observational or self-reported when I was practicing we would have the same client appear in different arrest records with different races put down. Geolocation data maybe that's more reliable.

[00:29:21.13] So another example from a few years ago when I was in practice arrest data saying law enforcement had arrested multiple people with this kind of actually goes against it, but multiple people at the same moment in time in different locations, same police officer in the report. So that's a kind of reliable tell that something's wrong there. In any event and then police disciplinary records a lot of people say, well, we want to get access to those records and maybe run predictive tools on them or

something but there's huge problems with disparities and bias even in the disciplinary process for law enforcement that could make some problems with that data.

[00:30:05.88] HARRY SURDEN: Oh great. Thank you for that perspective Rebecca and I'll add to that because I've studied some of the distortions that go into police data, and criminal data and one point that other commentators have made but if police practices themselves are biased in some way, it biases the data.

[00:30:25.29] So a good example is certain neighborhoods get patrolled more than others. And just the very act of patrolling one neighborhood versus others-- even if the crime rate is exactly the same in two neighborhoods-- you're going to lead to more arrests. More arrests lead to more recording of data. So it's going to appear that certain things are more correlated with crime than other things, but that's solely driven by a police practices. So and that's just an example of the way that which practices can distort the data and these models are built on data. So that that's a really great point. Any other comments either Dan or Maura to Rebecca's observations?

[00:31:04.94] DANIEL W. LINNA JR: Yeah Harry I was just going to add something after Maura's points really briefly well she raised this question to like a lawyer education right? Lawyers need to understand the right questions to ask, and we can be training them to ask these questions, but I also think we can learn a lot from what we're seeing develop in other areas. You look at the algorithmic Accountability Act, and if that were ever passed right to requiring impact assessments and things like that.

[00:31:25.94] Why aren't we requiring that in this space right and so how do we train lawyers to ask the right questions of vendors? And why aren't vendors disclosing more information about how these tools are validated? And where did the data come from? What sort of validation did you run before you release this in the wild? Now that it's out in the wild, how are you continuing to validate that it actually works?

[00:31:44.99] Right so part of this is creating that marketplace where the buyers are asking the right questions and demanding that the suppliers. I think we're seeing that start to happen in other spaces in the AI landscape but so far it hasn't seemed to really happen yet in the AI for legal services tools market.

[00:32:02.54] MAURA R. GROSSMAN: I'm working down to that point, I'm working with the group with colleague Jeremy Pickens who's in this space and I are chairing a committee that is actually writing a whole process for how lawyers should vet AI tools, what questions they should be asking? How they might actually perform an evaluation and so forth. So stay tuned, there may actually be something in this space it's through the EDRM which is the Electronic Discovery Reference Model that's an industry organization.

[00:32:35.51] HARRY SURDEN: That's great. And one area I'd like to see growth in that area but it's a more dense question is the purchasing by government of AI system. So governments are notoriously lacking in expertise and had an analyzed systems validate them and then use them. So we've seen this in the campus recidivism systems where trade secrecy protects us from validating the accuracy of the underlying results of these systems that judge that produce reports that judges rely on and deciding whether people go to jail or not.

[00:33:12.14] So they're deferring to numerical scores from these systems produced by third parties that may or may not be accurate or subject to biases or distortions and typically the government doesn't really have the expertise to figure out one way or the other. I'd love to see more work in that area. Let me turn to Rebecca and ask you how is I impacting and being used in the context of forensic evidence? And that's another area where we're seeing it being involved in the litigation space.

[00:33:46.66] REBECCA WEXLER: Yeah absolutely. So this is the area where AI is coming into the criminal legal system the most, apart from the predictive policing and recidivism tools. So as many of you may know, there have been a lot of problems with specifically pattern matching forensic methods with junk

science coming in, blood spatter evidence, image recognition trying to match somebody's identity based on the stitch pattern in their fabric, I mean all sorts of stuff that's not scientifically valid or hasn't been scientifically validated with no error rate and over claiming about the confidence of these testimonies. And this is without any technology involved just humans eyeballing stuff.

[00:34:32.72] So I think there's a well-intended attempt to improve on that pretty horrible baseline by trying to automate some of the pattern matching forensics. And so we're seeing machine learning driven software being used in maybe most widely known phase matching, ShotSpotter, bullet, shot recognition evidence coming into cases. But also DNA analysis for complex mixtures of DNA found at crime scenes, fingerprint analysis, bullet mark identification, voice matching, iris matching, handwriting authentication, authorship authentication for tweets, is this the kind of tweet that you generally say using some software to analyze and give us a result.

[00:35:23.12] So that's already here, there's no question that's being used in many, many, many cases daily. And there's huge problems with it. So real problems around access to scrutinize these tools, expertise needed to scrutinize these tools. So let me just run down a couple of ways that I think that the evidence rules are failing to impose kind of reliability, transparency, fairness constraints on this. So we generally turn to Daubert or Frye as our reliability rule for admissibility.

[00:36:00.76] But it turns out that the courts say experts can testify under these standards. Based on the outputs of systems that they don't understand. So you have a problem with experts getting up on the witness stand and they know just the basics. Well here's how I use this thing, I input something, I output another thing, I did a cursory internal or validation in my lab and so there you go. And then, you say all right well OK the Supreme Court told us the traditional way to challenge shaky but admissible evidence despite doper is cross-examination at trial.

[00:36:42.53] All right, so maybe this is really about cross-examination at trial, but where do the rules get you cross-examination? So one way is, if we say these things might violate confrontation clause rights, if the developer or the designer weren't brought to be cross-examined and you'd be able to compel somebody who has knowledge about the systems. There on the stand the courts have said no. Automated systems don't really create statements the way humans do, so we don't think that they're hearsay, we don't think they're testimonial hearsay, we don't think they implicate the Sixth Amendment.

[00:37:14.98] So that doesn't get you much on cross-examination. And if you try to go discover information about how the tools work yourself with a subpoena, you may encounter privilege problems. And that's where our intellectual property rights are coming into block discovery or subpoenas. Also some security rationales for denying the criminal defense counsel access to information about the tools if you think, excessive disclosures might lead to gaming or circumvention. So I think that our biggest challenge as legal scholars in this criminal evidence space brown AI figuring out how our old rules of evidence can help us ensure fairness, accountability, and due process values given that these tools are actually already here.

[00:38:06.22] HARRY SURDEN: Rebecca that's terrific and just to follow up a little bit, do you have any ideas about specific changes in example where you've seen an expert testify about a system without knowing its internals and how that specifically could have been improved?

[00:38:23.30] REBECCA WEXLER: Yeah well, actually I think there's again a role for the Academy here but one idea I've had that I've been unable to deliver on so far, and I would love to if anyone's interested in working on this themselves go right ahead, if you're interested in collaborating let me know, but I've had attorneys say to me what would be really useful is if someone in the Academy could write scripts for defense counsel to cross-examine ignorant experts on the stand.

[00:38:55.16] What are the questions defense counsel could ask when say for instance you know somebody on the stand saying this is data that we extracted from a device and we know that it hasn't been tampered with and it's exactly what was there, and you don't know how the device operates, that's not an AI machine learning one but OK so DNA analysis, what are the subjective design choices that went into the software you're relying on to come up with a probability that my client's DNA was included at the crime scene?

[00:39:28.17] And so one of the opportunities is that as the same technologies are used across many, many cases all over the country, there's actually economy of scale ability to share knowledge in the defense side that maybe never was there before when you're having custom case by case fact. Academy could create these scripts for cross-examination and distribute them free of charge. Let's do that.

[00:39:53.21] HARRY SURDEN: I love that idea. Maura or Dan do you have reactions either to the initial question or to Rebecca's comments?

[00:40:00.35] MAURA R. GROSSMAN: Sure so as Dan knows since he strong armed me I am about within the next month to publish a piece, which I think Rebecca can I get an opportunity to comment on, and AI--

[00:40:15.20] REBECCA WEXLER: Am looking forward to that.

[00:40:16.34] MAURA R. GROSSMAN: And it's in the Northwestern journal of intellectual tech and intellectual property or the other way around. It's one of those two.

[00:40:25.20] HARRY SURDEN: Thank you.

[00:40:27.29] MAURA R. GROSSMAN: Intellectual property and we're very excited about it. We actually take the position I wrote the paper with Judge Grimm who's probably one of the leading experts on evidence out there. We take the position that the current rules can work if parties in the courts actually know how to use them. And we also take the position you should not be able as was done in the Wisconsin Loomis case you should especially in the criminal sphere you should not be sentencing somebody and then saying sorry this is intellectual property, you don't have an opportunity to challenge this algorithm or learn anything about the data it was trained on.

[00:41:16.19] We respectfully feel that the Supreme Court in Wisconsin got that wrong. But there's also a point-- I think in a lot of these situations you're going to need more than one expert, you're going to need the expert who said I pushed the button and the result popped out is not enough. You need the other expert who can say, well, this is how it works, and this is how we validated it and all of that. And right now you're only getting that first expert who says I pushed the button and then when you ask them, well they don't know.

[00:41:53.31] And so it's sort of a circular firing squad at the moment but I think there have been virtually no courts that have really had to address the admissibility specifically of AI evidence. So there's not a lot of precedent there which was-- what we tried to do was to provide some advice, maybe not exactly the questions, but we do give a playbook of not only how to get it in but also how to challenge it.

[00:42:25.23] HARRY SURDEN: Maura there was a great and I fully agree with you. I think when private vendors are selling to governments, there are certain special restrictions that have to apply and you see this very commonly given life and liberty at stake and one of these I think should be the requirement that things like source code, and transparency, third parties can always choose not to sell to the government. But when they do given the stakes involved I think that they should be required under the proper circumstances to show a source code or data. Dan do you have any reactions to either Maura or Rebecca's comments?

[00:43:03.25] DANIEL W. LINNA JR: Yeah I mean just on that point I would love to hear Rebecca's thoughts on how we go about changing the rules like where do we start to require that. Because I think it's there was a lot of criticism of the Wisconsin Supreme Court in Loomis and people thought Oh they should go to the US Supreme Court, but you know I'd like to see more advocacy for saying, well let's change the rules, let's change the rules of criminal procedure, let's put statutes in place whatever we need to do to make sure that this doesn't keep happening.

[00:43:30.94] I think one of the other thing that was interesting is I mean junk science has been a problem in the courts for a long time, bite mark identifications and things like that have put people in prison. So this is-- in some ways this isn't a new problem and I think this relates to some of the questions about bias that I've seen in the Q&A and chat, and I think one of the things that is interesting in this area as well making sure good tools are used in this space, and there's worries about bias resulting in less fairness, less justice in court systems.

[00:44:04.42] I'd submit that the status quo isn't so great right? And so I think there's some pretty big opportunities for think about how can we responsibly use these tools? A lot of them are pretty painful failures, a lot of times we read about these tools just terribly unrepresentative data that if it had been properly validated and is anyone thinking at all would have said, well, wait a second why would we think this would work in this context, lack of diversity in the teams, developing and implementing and using these teams a failure failures to train people.

[00:44:32.47] I mean there was a terrible case in Detroit where Robert Williams was arrested based on face recognition tool being used. And there was a lot of outrage about the face recognition tool, but it seemed pretty clear and the police even admitted that it was not used properly right? It wasn't used as an investigative tool, it was just like Oh here's a match, let's arrest this person right? So there's I'd like to see that there are some promise here, no doubt bias, and the is that these tools can make our problems but I think a lot of the things are things that by more rigorous validation and employing best practices there are errors that could be eliminated.

[00:45:09.97] HARRY SURDEN: Dan Oh go ahead Yeah--

[00:45:12.46] REBECCA WEXLER: Can I jump in just Dan said what to change. So let me give up I want to give a pitch on that because I gave a pitch on folks developing a script for cross examination. I think the thing that lawyers are best suited to change are the rules of procedure and evidence. And so can we make them tech neutral but strengthening the opportunity for as applied adversarial challenges on a case by case basis?

[00:45:38.30] I think a lot of the discussion about what to do has tended to go to centralized standards creating bodies, audits, missed approval, and my answer to that is Yes and Yes and we purportedly have an adversarial system that relies on cross examination and adversarial scrutiny in an as applied case by case manner, and it's our responsibility as lawyers not to allow the development of technology to curtail those adversarial due process values.

[00:46:10.61] So some concrete changes. I've argued that the trade secret evidentiary privilege should not apply in criminal cases, that's not a legitimate reason to withhold relevant evidence from the defense. That's a purely legal argument. It is not tech specific, it's not saying source code always has to be disclosed, it's not saying only executables or what have you they have a debate with the experts in every case on what details are relevant in that instance. But have the debate on the legal standard of relevance, not heightening it to some impossible to meet necessity burden because you're giving special treatment to information on the intellectual property values.

[00:46:59.32] Same thing is happening with privacy. So more recently I've been arguing certain privacy statutes should not block criminal defendants access to relevant evidence. If we really believe that we can

rely on cross-examination and adversarial scrutiny we should design the legal rules to permit defense counsel to access relevant evidence.

[00:47:21.70] MAURA R. GROSSMAN: One quick response to that, I think Rebecca we also need to plead with our judges to really apply to Daubert. Often the leaning or the tendency is in and the jury can worry about it, the problem is the jury is in no better position to figure out whether it's valid or not, and we really need the judiciary to really tighten up that initial gatekeeping function.

[00:47:52.03] REBECCA WEXLER: Good point, good point, I agree and so the ability for defense counsel to cross-examine and the Daubert hearing, also has to be defended so that judges can do that job. So at our pre-trial subpoenas power back, get our constitutional rights that have been watered down pretrial get those back. And it might help judges do exactly what Morris said we need to do, which is really apply to Daubert.

[00:48:15.91] HARRY SURDEN: OK so before we turn to questions for our audience, I just want to have one quick reaction to-- I think a really important topic, which is predictive analytics this is the use of data and in some cases machine learning to make legal predictions about outcomes of cases or damage awards or other sorts of important facts. So I'd love to hear everybody's thoughts on that trend.

[00:48:41.65] DANIEL W. LINNA JR: I'll just jump in. I think we are seeing more and more of this driven by clients, particularly corporate legal departments they want to see their lawyers using data to predict how much something is going to cost, is a place where there's been a lot of work done thinking about staffing of lawyers as well, and then more and more work on predicting outcomes do I think in a lot of ways that is not nearly-- there is a lot of talk about prediction five years ago even and I think a lot of it is mostly just descriptive statistics.

[00:49:11.41] One thing I would say is, again this is a data quality issue there was a study done a couple years ago looking even just across like Westlaw Lexis Bloomberg, I shouldn't necessarily say data quality it's just that in these different platforms the data is not cleaned and represented exactly the same way, so you might get different numbers across these platforms based on what you're looking for. So that's one of the things we need to be aware of, and then just the lack of access right pacer is still locked up now maybe Congress will change that and pass the law to free the PACER data.

[00:49:41.35] But you know what I would love to see academics spend more time looking at State courts as well, we tend to focus on the Supreme Court and the federal courts. This is a huge problem in state courts and right now state courts are several of them are thinking about investing and improving their systems. Let's have them put in place systems that make that data accessible to the public, to all of us and that would be a huge step forward.

[00:50:05.18] MAURA R. GROSSMAN: So I agree with Dan. I think uptake has been relatively limited in these predictive tools other than you can find out how long it takes your judge till they file a summary judgment the response to a summary judgment motion but getting a prediction on how likely he's to rule, or she is to rule one way or the other much harder. I dipped my toe in this area with machine learning and I was actually very surprised at how few of the litigation funders are using AI at all, and I think there's also a challenge because when I approached plaintiffs lawyers and some of these litigation funders and I said, "How do you know what's a good case? What do you rely on? What are the criteria?" They don't want to share them.

[00:51:09.19] I don't know if they couldn't articulate them and it was just something they know in their gut, or they felt it was proprietary. But if you can't define the criteria of success or winning or whatever then it's impossible to train the algorithm to do it.

[00:51:28.34] HARRY SURDEN: Rebecca, any thoughts?

[00:51:30.59] REBECCA WEXLER: Well, predictive analytics changing the practice of criminal litigation we touched a little bit on the recidivism tools and those are changing the practice of litigation and they are predictive. So they're not the same kind of thing as predicting the judge outcome but I would say that they are having a huge effect on criminal prosecutions at the pre-trial stage and at the post-conviction sentencing stage. Not at the evidence stage. So that's where they're coming in and I think that we're seeing the problem of lack of procedural rights in those pretrial and post-conviction settings is impeding our ability to contest those tools.

[00:52:13.52] HARRY SURDEN: Great. And as Rebecca knows I've done some research on predictive analytics, and one interesting finding is that just basic descriptive analytics of the kind Daniel was describing forget about the advanced machine learning analytics. If properly contextualized can dramatically improve predictions over pure intuition alone. All right let me turn to Krister with a question for the panel.

[00:52:39.93] KRISTER KROLL: They say, a lot of the-- I guess restraints around AI sound like it's related to junk science and implicit bias, and the use of AI, is there a role for AI to play in reducing bias in the courtroom?

[00:52:59.96] HARRY SURDEN: Dan, you had commented on that earlier do you want to elaborate on that a little bit?

[00:53:05.10] DANIEL W. LINNA JR: Yeah I think it depends how we define which kind of biases we're talking about. I mean there's Daniel did a study of Israeli parole boards right where if it was before lunch and you're hungry your chance your petition being granted was almost zero right? That's the kind of bias. And I could help us reduce a bias potentially like that making recommendations things like that. I think that you look at some data about asylum grants by judges across the country, even within particular courts and some judges granted very frequently 40% of the time or something like that, and other judges granted almost never right?

[00:53:42.93] Might we think about tools that could help make recommendations there that would reduce what seems to be bias and not just exercise the discretion in applying the law. I think there are absolutely plenty of opportunities to think about doing that. And I'm also particularly interested in thinking in a landlord tenant court right looking at landlord tenant proceedings.

[00:54:03.66] The vast majority of tenants aren't actually going to go all the way to court. And even when they do I'm not so sure that outcomes are consistent and the law is applied the way that we would expect it to be applied. And can we create tools though that can help tenants better understand what their rights are and understand when they actually do have a winning case that they maybe should pursue or maybe even get a lawyer involved? And so I think that there's a lot of potential in areas like that. We just have to be thoughtful about some of the potential risks we're introducing these tools.

[00:54:33.62] MAURA R. GROSSMAN: I think one of the issues is we don't have great baselines. So if we don't know how biased the judges are in the first place it's very hard to tell if the tools doing any better. I think another thing we've seen in Rebecca probably knows this well is people are influenced by the score that pops out of an AI tool. So imagine you're a state judge and you're up for re-election this year and out pops a risk assessment score that says 8 out of 10 likelihood of recidivism, you're going to think well I'm safer to jail this person than to let them go because if they go and kill somebody I'm not going to get re-elected.

[00:55:23.36] So there are all kinds of factors whether explicit or implicit, also where these numbers can impact. So I think it's a thorny issue, I think the potential is there Krister. I don't know how we get there without better data and better research on how these predictions impact judges.

[00:55:50.09] HARRY SURDEN: Rebecca, any thoughts?

[00:55:51.92] REBECCA WEXLER: Yeah, I do think there's an opportunity let's have AI tools that will predict when police officer witnesses are likely to perjure themselves on the stand. So where are those tools? Certainly an opportunity for technology to address some of the structural biases already built in the system but I don't see them being developed, and I think it's because of the market failure.

[00:56:13.28] HARRY SURDEN: It's a great point, and one point that Dan made earlier is that data can certainly be biased in various ways either just in the neutral sense of distortion, and being unrepresentative or in the way we commonly use it as having racial, ethnic, gender or other undesirable biases. But judges, humans are also biased too so at least in some cases data offers us the opportunity to make those biases explicit and identify them whereas we can't peer into judges brains at least not yet.

[00:56:45.15] So let's turn to another question, which might be our final question because we're running out of time, so Eboni says, "Who fits the bill with advanced technology development we often see huge government grants for the DOD or NSF and private companies funding research and houses at universities. But what about AI and law basic, AI and law research that could help society?" who's going to foot the bill for that so let me throw it out to our panel.

[00:57:13.04] DANIEL W. LINNA JR: I think that's a great question and so Maura referenced earlier NIST right investing in the correct track, I mean that's great. The National Science Foundation recently had a call for designing accountable software systems, and the idea was that we ordinarily think of people being accountable under the law, but now we need to develop machines that are accountable under the law. Now fortunately the NSF was calling for legal researchers to be involved in that but I think it's an example of hopefully we'll see more and more NSF funding and funding from other governmental organizations to promote research in this space. And we and universities need to do a better job of applying for that and showing the opportunities to invest in and the benefits that'll come from doing that research.

[00:57:55.85] MAURA R. GROSSMAN: And I think to Dan's point, grant funding has a tremendous impact on what research gets done. So if your funder is commercial, private company, they're going to be interested in something that helps their product or their commercial venture. If your funding is by the Department of Defense, they're going to want a military application. There is funding available, it's not huge but there is funding available for in the nonprofit sector for some foundations fund access to justice research. But a lot of it is where the priority of the funder is, and unless it's not necessarily aligned with the areas that we're talking about as areas of interest to us as legal people in legal justice.

[00:59:01.73] HARRY SURDEN: Rebecca?

[00:59:04.19] REBECCA WEXLER: I don't have a lot to add I think they've said everything there. But the NSF call was an optimistic one.

[00:59:10.43] DANIEL W. LINNA JR: Yeah, you know Harry just one other quick thing in this Jason Tash wrote an article just recently about China's investment in platform technologies and the opportunities here right to think about not just developing technologies for here in the US, but we should be working with governments around the world right in thinking we care about rule of law, look at the way these technologies are impacting court systems and legal systems. We should be thinking of that's the other we need, it here at home but we should be thinking around the world and the impact that these systems can have in other jurisdictions as well.

[00:59:43.89] HARRY SURDEN: That's a great point and we can really leverage the sort of worldwide resources. So countries like Singapore, for example are fabulously interested in legal informatics versus other countries that might not be as much on the radar. And I would also issue a plea to all the foundations out there who are looking to make high impact investments. This is one area that's really under the radar of most foundations but can really I think make big impacts out there in the world.

[01:00:13.68] So we are unfortunately out of time, but I want to thank my excellent panelists for really interesting state of the art and topical discussion Maura, Dan, Rebecca thank you so much. It's really been a pleasure talking with you. And we're going to have a--

[01:00:29.27] REBECCA WEXLER: Thank you.

[01:00:30.14] MAURA R. GROSSMAN: Thanks.

[01:00:30.47] DANIEL W. LINNA JR: Thank you.

[01:00:30.89] HARRY SURDEN: Thank you. We're going to have a 15 minute break now and we'll return at 30 after the hour for our third panel. So thank you so much.

Artificial Intelligence and Law: The Near Future

https://www.youtube.com/watch?v=8jM6PSud-bM&list=PLTAvIPZGMUXM-qNUiETa388qLfZuyRndI&index=3

AI Conf Panel 3

[00:00:00.36] HARRY SURDEN: Hello, and welcome back to our third panel. In this panel, we'll be looking a little bit future facing to try and predict a little bit about the use of artificial intelligence and law in the near term five years out. And I know that we said we would be grounded in the evidence, and I intend to be in this panel as well. And I think let's talk a little bit about some principles that I believe make for good, more reliable predictions about the future versus principles for making less accurate predictions about the future with respect to technology.

[00:00:39.37] So out there, there are folks in the world who are making predictions about the future of artificial intelligence generally or artificial intelligence in the law. But I think I would advise our audience to be skeptical of predictions that have two features. One are predictions that occur more than five years out in the time frame. It's quite hard in general to predict technology five years out, even harder to predict beyond the five-year time frame.

[00:01:13.26] So an example I will give of what I think is sort of an unreliable prediction framework are those who follow the singularity model of prediction. There was a mode of prediction made 30 years out about various futures of artificial intelligence. Another example of how the singularity I think is an example of bad predictive capabilities in the space of AI is that it relies on technologies that have yet to be invented.

[00:01:44.19] So if you see people out there predicting in the space of artificial intelligence based upon things that still have yet to be invented, such as strong artificial intelligence or analytical reasoning, that is a principle of skepticism because it's very hard to predict if and when technologies that have not been developed when and if they will be.

[00:02:10.95] By contrast, I think there are some fairly reliable methodologies to see the near term future. And that's what we're going to be working on in this space. I think, if you restrict your time frame to the one to five-year time frame based upon technologies that exist currently, you can often make reasonable predictions that certain of today's technologies will become faster or cheaper, more expansive, et cetera. And while that's still fraught with issues, we can, I think, make at least better predictions by putting those constraints on reality. So that's what we hope to do in this panel.

[00:02:51.15] So joining me are really excellent and distinguished set of panelists from the University of Pittsburgh School of Law. We have Kevin Ashley. So Kevin Ashley is notable because he is one of the real pioneers in artificial intelligence and law. He has a long and distinguished history of doing real hands-on computer science work in legal argumentation and all sorts of other areas of artificial intelligence in law. So very honored to have him here.

[00:03:24.18] Also, joining me is another pioneer in artificial intelligence and law is Ansel Halliburton. So Ansel is involved in the early days at Stanford of legal informatics and many of the projects that have spun out there in the world in predictive analytics in its early phases.

[00:03:44.85] And last but definitely not least is Meghan Ma. Meghan Ma is the future of legal informatics. She's upcoming PhD recipient and going to be a fellow at the Stanford Center for Legal Informatics at CodeX Center. So I'm really pleased to have all of you here joining me as we peer cautiously into the future of artificial intelligence and law.

[00:04:11.70] So let me ask my first question to Meghan, and then I will toss it out to the rest of the panel for reactions. Where do you see the most promising developments in the use of artificial intelligence within law, looking at the near term five-year time frame?

[00:04:28.68] MEGHAN MA: Yeah, great question. And I'm so happy to be here, and especially amongst giants. I prefer to hear your work. Of course, Kevin, your work kind of both of those-- a lot of your seminal pieces really ground my thesis. So I am just thrilled to be here.

[00:04:46.21] So to your question, I think that what's most exciting and what's most promising about AI and the use of AI in law is actually kind of in how it may be able to reveal what's the legal information that is being contained in our text. I think at the moment we have these assumptions or these strong intuitions, and we rely a lot on experience, the experience of law.

[00:05:13.21] But now we're actually able to test some of that either on both sides, whether we're part of the computational law and the rules based side, and knowledge representation, or we're on more of the data driven side and looking into the neural networks. We're kind of able to really unpack what's contained before in natural language how the law kind of has been captured and manifests itself in natural language. We're actually able to find that out, at least from the computational side, as we try to build models on this text. We see actually the law is rather networked. How far back can we code or codify the law?

[00:05:54.76] So I think, again, what's most promising is information that has been contained in these texts and in legal text. We're now actually able to see it. A lot of scholars kind of emerging field of experimental jurisprudence. We see Julian Nyarko, for example, where Kevin Tobias who is experimenting with what actually is ordinary meeting and ordinary language in law. So this is all I think what is most promising and what's exciting, what's to come.

[00:06:24.53] HARRY SURDEN: That's great. And Kevin, do you have any reactions? Where do you see promise or reaction to what Meghan said, either one?

[00:06:33.23] KEVIN ASHLEY: Thanks Harry. And thanks for the invitation to participate. It's a pleasure to be here with Meghan and Ansel. And I really do agree with what Meghan has said. There are sort of two particular areas that I would focus on. First is improvements in automated contract review for purposes of due diligence. And secondly, in the use of legal text analytics to improve access to legal materials by members of the public as well as legal professionals.

[00:07:04.88] In the former category, I'm very interested in the work of Nick Long at Gravity Stack, who predicts that these improvements will amplify the utility of virtual data rooms and make it possible for lawyers to understand better what's there in these enormous data repositories of contracts associated with due diligence searches. That in the next two years, he predicts AI will generate reports that help to reduce the initial legwork on the part of the attorneys and focus them more quickly on the problems and the risks.

[00:07:46.67] And in the area of making legal texts available to the public, I'm working on helping users find sentences that explain statutory terms in cases. And that can summarize the cases in terms that will help the users decide if the case is worth following up.

[00:08:07.61] HARRY SURDEN: And just to follow up, Kevin, where do you foresee contract diligence improvements happening?

[00:08:17.06] KEVIN ASHLEY: Where Harry, or which particular ones?

[00:08:19.64] HARRY SURDEN: Yeah, what sort of developments do you see forthcoming in improvements?

[00:08:25.49] KEVIN ASHLEY: Well, I think that the improvements will be in the area of helping the systems to take advantage of the output of the human reviewers of the contracts. So the human attorneys are using the virtual data rooms. They are making notes as they go.

[00:08:51.90] And so far, at least as far as I know, the systems are not able to process the notes and those annotations and make them available more generally to other users. But that's an area where I think as the data gets collected, work can be done to actually help to translate those notes into a form that the system can understand and use to help privilege the presentation of certain materials over others.

[00:09:22.43] HARRY SURDEN: Great. Thank you, Kevin. And let me turn to Ansel, who I also should mention is also counsel at Align Technologies focus on IP matters. So Ansel, where do you see the most promising developments in AI in the near term in law?

[00:09:36.53] ANSEL HALLIBURTON: Yeah, thanks Harry. Thanks for inviting me. It's pretty fun to be here. So I agree with everything Meghan said and most of what Kevin said. I think documents are really where the action is likely to be for the foreseeable future. That's something I've been working on for quite a while as well.

[00:09:57.02] Before I came to Align two years ago, I was working on a startup doing document analytics that we had spun out from Airbus's R&D lab in Silicon Valley. So it's definitely something I've been focused on for a very long time. And there's so much more work to be done understanding documents and bringing structured data out of unstructured text documents. And law is really just one area where that's true.

[00:10:26.36] When we were at Airbus, we had done a little mini pilot with a life sciences company understanding cancer trial research papers. And it's really the same exact problem. So I'm excited about not just legal specific tools, but just the state of the art generally improving to extract structured data out of documents. I think, there's a lot of small applications--

[00:10:52.93] HARRY SURDEN: Ansel, can I just pause you there for a second? Just for our audience, do you want to explain what the difference is, what's an unstructured document and what's a structured document just so in the context of a contract say?

[00:11:04.94] ANSEL HALLIBURTON: Yeah, so if you and I as humans look at a contract, we see a rectangular piece of paper. It has probably a title. We can very easily visually hone in on that title. And then we see some bullet points or numbered sections with some spacing between them. And we can see that structure just very intuitively. Much harder for machines to do that it turns out.

[00:11:27.23] And so one thing that we've been working on at the startup was inducing the logical structure of that document just from basically pictures of paper, PDFs that were maybe scanned in from paper. That kind of thing. So a lot of exciting improvements over the last few years in that area. And you can learn a lot more from the document once you understand its structure.

[00:11:54.95] In terms of structured data, what I mean by that is things that you can plot on a graph. You can put them on a map, right? You can't just sort of-- what a lot of the due diligence tools from M&A do is they will identify sections of a document that might be about a topic. And that's great. But you can't really do much more computation on them than that. But if you can pull out prices or dates or things like that, then you can actually do more interesting computational operations on them.

[00:12:28.83] HARRY SURDEN: Great. And you were going to make another point before I distracted you about where you see points of the future going on.

[00:12:36.75] ANSEL HALLIBURTON: Yeah, I think there's little things. Like from where I sit in S practice, it's different than when I was sort of practicing in a firm where we're just part of the business. And so I

read and write a lot of email, and file a lot of email. And so one little feature that I've seen recently demonstrated is predictive filing, which is not a very sexy exciting feature, but it saves you a couple of seconds each time you use it. And you use it maybe 50 times a day. And use that five days a week, 50 weeks a year. That stuff adds up. It's a real productivity savings.

[00:13:18.17] HARRY SURDEN: Any reactions to Ansel's comments from either Meghan or Kevin?

[00:13:23.69] KEVIN ASHLEY: No, but I'm curious what Ansel disagrees with that I said before.

[00:13:28.95] ANSEL HALLIBURTON: [CHUCKLES] Nothing in particular. I think my focus is less on the sort of big M&A transactions. I think in-house and outside counsel M&A people will be fine. They can afford to throw more resources at these problems. And so I think they're academically and technologically very interesting.

[00:13:55.64] But it's a bit of to slow up for me. I think there's a lot of room for this kind of technology to help with access to justice problems. We can analyze briefs. Now there's a number of tools on the market that do that. And once those sort of come down in price, they become affordable to the general public. That's going to help people a lot.

[00:14:18.21] HARRY SURDEN: OK, so this has been a theme of a lot of these panels, which are a lot of these tools are being used in areas of law that have sort of limited social impact. But there's a lot of opportunity for these tools to be used in ways that really help society and unlock a lot of social justice values. And that's something really to be aware of.

[00:14:41.14] So Ansel just as a follow up, you talked about predictive filing. And what I take by that, you mean documents are coming in. Instead of an attorney figuring out which folder or which matter to assign it to, the computer can make an educated guess. So in your own practice, do you find AI doing more incremental improvements like this, or more substantial improvements, or some combination of the both?

[00:15:12.83] ANSEL HALLIBURTON: I think there's a ton of room for incremental improvements, little things like that that are not going to get a lot of headlines. But they'll be working away in the background making people's lives a little bit easier every day. And the upside of that is really it frees you up to do the more value added work that practicing at the top of your licenses people. Legal ops like to see a really value added stuff.

[00:15:39.58] HARRY SURDEN: So hearing a couple of years out, where do you see just incremental improvements in predictive analytics, things like that, that could actually make a big impact on day-to-day practice?

[00:15:53.30] ANSEL HALLIBURTON: Yes, so things like making documents more searchable is one that maybe people don't think about it as much. Pulling that structured data out of documents. Like, for example, in-house we have a big heavy duty contract lifecycle management system. And it's a lot of work plugging in manually all this metadata that goes with each contract record.

[00:16:22.28] Well, wouldn't it be better if a computer could do some of that, scan the contract and extract at least the most of that stuff? And there's tools on the market that do that already, but they're not widely deployed yet. So I think that's one example of incremental but helpful improvements that I think are going to play out over the next five years.

[00:16:42.48] HARRY SURDEN: So some opportunities for just simply applying technologies that are out there today in areas of legal practice that are very manual where we could really improve things. Meghan and Kevin, do either of you have any reaction to this idea of incremental improvements in AI?

[00:17:00.35] MEGHAN MA: Yeah, absolutely. I just want to echo what Ansel was saying. I think that actually a lot of the change is both incremental and substantial in the sense that, I think, the biggest types

or most substantive changes are going to come in an incremental way. Because I think change that really makes an impact most people are not actually actively conscious of it.

[00:17:25.38] And what I mean by that is if you imagine in legal research engines at the moment right now, those who are kind of starting up in law and trying to engage with these systems, many of us have probably experienced the whole trial and error process around it. The keyword search as Pablo Arradondo says, it's the prison of keyword search.

[00:17:46.10] And what we kind of noticed right now is many people eventually have to go through a steep learning curve to master these tools. And then these new legal tech tools that are super incredible they come on stage, but there's fatigue. And that's actually probably the inertia behind their pickup.

[00:18:03.02] And so what I imagine actually is the available option of both to kind of see the difference, and for user interfaces to be much more accessible. Because at the end of the day, people don't want to learn new tools and new methods of mastering it. They kind of want to seamlessly transition into it. So I think that's probably one way that I see how it's both incremental and substantial.

[00:18:26.95] HARRY SURDEN: Meghan, that's a great point. And I like to say, one of the most successful AI tools of all time that everybody takes for granted is a little red, squiggly line that you see in Microsoft Word that tells you when you've spelled a word wrong. It's operating in the background using a lot of sophistication, but it brings in so seamlessly we don't even see it there. And we just take it for granted. So that's a great point. Kevin, do you have any thoughts about this?

[00:18:52.29] KEVIN ASHLEY: Harry, I think incremental change is likely because as these tools get used, they collect new kinds of data from the ways in which the users employ the tools. Just to follow up on my little example of learning from human annotations of the contracts. You can't make progress on that unless that data is available.

[00:19:21.36] And when they're using the tools, they're probably-- if the tool is well designed, using it in a way where they're recording their data at various points. And then that means there's a new collection of data with which to make some kind of improvement. So I see this as an incremental process.

[00:19:42.99] HARRY SURDEN: So kind of this positive feedback loop of improving the learning data that we're seeing in a lot of areas how, for instance, your email program learns how to better identify spam the more you train it and the more you teach it.

[00:20:00.33] KEVIN ASHLEY: Yeah. And there's both the learning from the human usage in terms of learning weights that allow better prediction, but there's also just learning from new kinds of information that people are recording. They have an opportunity to make linkages between documents. Meghan pointed to this before. And perhaps to annotate the significance of it.

[00:20:31.24] And if you get that data, you can start to figure out, can it be analyzed intelligently, or can we use some kinds of techniques to get humans to kind of make their comments more stereotypical so that a program can reason with them and do something interesting with them?

[00:20:49.71] HARRY SURDEN: Great. So this is sort of leveraging semantics and knowledge representation on top of some of these other to make better use of this information.

[00:20:58.71] KEVIN ASHLEY: Ideally, yes.

[00:21:00.48] HARRY SURDEN: Meghan, did you want to react to that?

[00:21:05.72] MEGHAN MA: Well, I think that what's kind of fascinating at this moment is really-- and someone had raised this as a question in the Q&A about if we make kind of these documents more

structured and we kind of establish more of a framework around it, are we removing the context? Are we getting rid of the nuance?

[00:21:26.77] And I think that what's interesting and why kind of there should be a partnership between kind of where the data driven approaches and getting better data, as well as the knowledge representation side is we're able to start reframing how we can capture context and can capture nuance.

[00:21:44.29] I think one of the biggest hurdles we suffer from is the intentional versus unintentional ambiguity. And there's a lot about how we can structure better to get rid of the unintentional ambiguity. But is that in a way removing the intentional? So some of the newest techniques and some of the research that I'm interested in is how linguists capture what they call pragmatics, or how they capture nuance. And some of the work that they do is in probabilistic inference.

[00:22:11.57] So I think that kind of right now some of the richest research areas maybe are to find a way to marry both these data driven approaches. How do you get better data out of these systems that Kevin is mentioning? And then for those who want to actually formalize and place more structure, how do you kind of marry the two?

[00:22:31.00] HARRY SURDEN: That's fascinating, Meghan. And then for our audience members who want to learn more about capturing information probabilistically and pragmatics, do you have any recommendations for some researchers that you happen to know about or recommend off the top of your head?

[00:22:47.82] MEGHAN MA: So off the top of my head I think I will maybe introduce the kind of computational pragmatics notion. There's a lot of work in linguistics. And they're kind of both in cognitive and computational linguistics. And they're kind of using cognitive methods and cognitive framing to think about linguistics from a computational perspective.

[00:23:13.05] HARRY SURDEN: Fabulous, thank you. So Kevin, let me ask you this. We've talked a lot about that promise of AI increasing in the next five years. What are some of the technological limitations or roadblocks that you see are limiting the growth or appreciation of AI within law?

[00:23:32.19] KEVIN ASHLEY: Well, Harry, I'd like to quote you. You wisely said once that machine learning yields intelligent results without intelligence. And I think we're seeing legal text analytics making predictions without being able to explain them in terms that lawyers can understand. And so the question is how to incorporate legal knowledge into the machine learning process, or at least use it to supplement machine learning in some way.

[00:23:58.38] We've seen some big advances in representing legal texts with transformer models, like legal BERT or GPT-3. Legal BERT in particular is trained on large corpora of legal texts. And this can enable it to take into account the context and the words in which the words appear in legal documents.

[00:24:19.95] But there are two big things that are still lacking. One is, as Marcus and Davis pointed out, deep learning just has information about lots and lots of complex correlations without any structure. And I can't figure out how the models are likely to be able to explain and argue about legal conclusions without taking conceptual structures into account.

[00:24:44.89] And then another wise person, David Ferrucci, the one who led the IBM team that developed Watson, likes to call these transformer models super parrots. They basically work by saying to themselves, based on all the documents I've seen, what would a human likely say here? But his point is there's a lot left unwritten. There's a vast body of shared experience that lead humans to write the words in the first place. And think of how true that is in legal practice. It's not written down. And if it's not written down, these super parrots are not going to be able to generate it.

[00:25:27.00] HARRY SURDEN: Yeah, that's a great point. If I were to ask Legal BERT how many legs a banana has, it would probably give me a confident nonsensical answer like GPT-3 did. Ansel, what are your thoughts on some of the roadblocks that are holding back AI along?

[00:25:44.90] ANSEL HALLIBURTON: Yeah, so building off what Kevin just mentioned about the corpora, I think the corpora themselves are perhaps an issue. When I was working on understanding contracts, there's not really a great corpus to go to. What everybody does is they scrape the SEC's EDGAR database, which is big public companies filing their material contracts, if anything.

[00:26:13.53] So it's super, super skewed to huge companies. And even within those huge companies, it's only the hugest contracts that get uploaded there. So that doesn't help a mom-and-pop business really at all. it's just the wrong corpus. So I just want to give a little plug for a place that does have a good corpus of legal documents.

[00:26:38.74] So I'm on the board of Free Law Project, which is a non-profit. And what we do there is we collect up as much primary legal material as we can and publish it for free. So that's all case law, but it's a district court cases through the recap browser extension. It's appellate cases, state federal, as much as we can get our hands on. So a great source for legal corpus if you're interested in case law.

[00:27:08.22] HARRY SURDEN: Thank you, Ansel. And that's a great point. And I second the Free Law Project. And also the idea is a theme we've heard in some of the other panels that part of what's holding back AI and law, particularly for public good purposes, is the lack of availability of data. We see sort of distorted data sets, like the EDGAR data set that are not representative of contracts as a whole. And we also see a lot of legal data protected by secrecy and privacy among firms. Kevin, do you have any reactions to Ansel's comments there?

[00:27:47.83] KEVIN ASHLEY: Well, the availability of data is key. We've been using the Harvard CAPS resource, which is an amazing resource. And at least for purposes of research is readily available. In the area of automated contract reviewing, Nick pointed out that no single firm has enough data to learn the things that we would like to learn for purposes of issues like due diligence, or risk assessment or things of that sort. And it raises the possibility of how that data could be shared across industry, which is maybe a pipe dream, but at least worth thinking about, I think, because it's key to making progress.

[00:28:44.74] HARRY SURDEN: Absolutely. Meghan, did you have thoughts on this area?

[00:28:49.31] MEGHAN MA: Yeah, I think my thoughts are less kind of technical, but more on sometimes the muddiness around who is the user for these products. I think a lot of the times we have these very socially social impact and very access to justice perspective, but we're kind of some of the uptake. It ends up turning into industry.

[00:29:11.52] And then there are hurdles around are we going to allow those to take a look into our insurance contracts, for example, or whether or not we can actually-- they're OK with sharing the clauses that have historically been problematic, for example. So I think less technical sometimes, but sometimes it might be a people problem and the direction of where actually is the problem.

[00:29:38.68] HARRY SURDEN: Yeah, that's a really good point. A lot of these are problems of practicality. So let me throw this out to anyone in the panel. Where do you see artificial intelligence adding the most value from a day-to-day perspective to actual attorneys in the one to year time frame compared to now where we see developments sort of going? Kevin?

[00:30:08.67] KEVIN ASHLEY: Well, I would focus again on that automated contract review area. I mean, one thing that I think is happening and increasing is that the tools are not just used for due diligence searches in mergers and acquisitions, but they're being institutionalized on a more regular basis into the

functioning of a corporate legal department, and thus potentially putting in-house counsel in the position of monitoring the creation of new contracts and understanding the existing contract obligations.

[00:30:58.58] And I think that kind of putting the council giving them more information, giving them the position of monitoring a greater area, and hopefully applying some intelligence here and there to apprise them of problems. I think that's likely to be the most useful thing that AI could do in the next five years.

[00:31:26.78] HARRY SURDEN: So if I hear what you're saying is things like decision analytics for attorneys who have complex web of maybe even English language contracts, and the AI systems can help them understand in maybe probabilistic or broad strokes what they have in ways they can't quite understand now.

[00:31:46.75] KEVIN ASHLEY: Yes. And perhaps help to identify conflicts and problems that could arise. I realized that that requires a lot. But we're speaking incrementally, right? And we've got five years, and an increasing amount of data. I think that would be an interesting focus. But anyway, broadening the application of these sorts of tools beyond just preparation for litigation or preparation for mergers and acquisitions and making it a more general part of corporate legal practice.

[00:32:24.20] HARRY SURDEN: Yeah, that makes a lot of sense. And it really comports with your idea of taking the technologies that are available today and just starting to apply them in ways that can be realistically done, but just aren't for whatever reason. Ansel, do you have any thoughts about that, given your own practice or experience in developing analytics?

[00:32:45.71] ANSEL HALLIBURTON: Yeah, what I saw at the startup was really a lot of our potential customers were not ready to do really any kind of advanced analytics. And I sort of analogize it to Maslow's hierarchy of needs, if anybody is familiar with that. You've got physical needs, like you need to eat. You've got some other needs, like you need shelter above your head. And eventually then you can start reading Shakespeare.

[00:33:15.65] But a lot of legal departments are not there yet really at all. They're really still dealing with the physical needs of just, like, literally finding the contracts before you can analyze them. And just getting your house really in order at all. And having the right roles and responsibilities among people in your team. And AI is only going to really help so much with that really basic stuff that's really-- it is foundational, right? It's at the bottom of the pyramid because it is foundational, right?

[00:33:51.50] So I think there's a lot of work to be done just in terms of legal operations. So getting those houses in order so that we can move up there and eventually get to the point where there is some structured data, there is some organization such that you can do the more interesting analytical work and really get to the top.

[00:34:17.30] I think, I see that where I am as well, I have a dual role. So I do substantive legal work and trademark law. But I also do about a third of my time in the legal operations team bringing in new technologies and rethinking how we do our work. And that's what I'm seeing.

[00:34:37.57] HARRY SURDEN: Great. Thanks Ansel. And Meghan, let me ask you the same question, or react to either Kevin or Ansel's points.

[00:34:47.30] MEGHAN MA: Yeah, actually so where I see quite a bit of exciting progress is probably in computable contracts. And you had mentioned this in one of your responses earlier. I think that what we notice sometimes with contracting is there's what there is the happy path, for example. That kind of nothing happens and all is good.

[00:35:11.33] But when something happens, a lot of it is like, I really don't know, or I don't know what actually I don't know. And I think the point of computer contracts and having this type of structure is while

contracting, there's kind of this transparency. And there's a clarity around what's going in right away. As opposed to kind of the retroactive approach, which is we're scrambling now. And we have to unpack all this information at a later date. So our kicking the can down the road, so to speak.

[00:35:42.42] So I think where things will be most powerful is in at least computable contracts, which, I think, works well with contract analytics eventually, or contract analytics provides information for how to build better computable contracts. So I think all of these things go hand in hand.

[00:36:00.96] HARRY SURDEN: That's great, Meghan. Thank you. So what actually I'm hearing a common theme among Ansel, Kevin, and you is that a lot of the work will be done in taking this implicit structure that exists out there in informal or formal paper documents and making them more explicit and formal and structured.

[00:36:20.33] And just that sort of infrastructure improvement will lead to more interesting maybe more powerful analytics down the road. So that might be the next five years is kind of this move to a little bit more explicitness in law. And one final question-- oh, Kevin, did you want to comment there?

[00:36:42.14] KEVIN ASHLEY: No, I was just reading one of the chat questions, which looks interesting there.

[00:36:47.72] HARRY SURDEN: Oh, yeah. We will get to that right away. But before we get to that, let me ask the final question. Then we'll turn to our first student question. Just on your wish list, what problem, if you could wave a magic wand, would you like to see the most solved in the next one to five-year time frame? It could either be a technological problem in AI, something yet to be invented, or could be a sociological or other problem out there. And I'll start with Ansel. What are your thoughts there?

[00:37:21.66] ANSEL HALLIBURTON: Yeah, I'll get back on my corpus soapbox and ask all the corporate legal departments and small businesses out there to get together and contribute contracts to a corpus that we can use. That's one thing that kind of held us back.

[00:37:40.28] HARRY SURDEN: Yeah, so that would be great. And a lot of AI has made progress in other areas outside of law because they have these giant corpuses, like ImageNet, which are AI repositories of images and things like that. So we need some useful analogs in law. Meghan, what are your thoughts on that?

[00:38:02.57] MEGHAN MA: Yeah, if I had a magic wand, I think my goal is very much to what Kevin was saying right from the get go is that more people have access to legal information. I think access to justice comes from access to legal information. And I think right now what we see is that there's a moat around the legal language and the text.

[00:38:24.68] And that is creating a fortress and protecting what people really need to access, not only these legal documents, whether it be case law, or legislation, or contracts. So for me, I think, my hope is that the progress that we make with these types of technology is that it's really able to reach everyone. And that we raise the level of legal literacy across all.

[00:38:54.22] HARRY SURDEN: Terrific. Thank you, Meghan. And I think that echoes a lot of the themes we agree. Kevin, you've now been given the magic wand.

[00:39:01.37] KEVIN ASHLEY: OK, well, if I could, I'd wave it and enable deep learning neural networks to explain their predictions in terms that lawyers can understand. And I think for that, legal text analytics will have to extract aspects of legal knowledge from the legal texts and be able to turn them into explanations.

[00:39:25.42] And I think in doing that, we could make a connection to some of the knowledge base work in AI and law modeling reasoning by analogy in case arguments, for example, and use that to help with

the machine learning generated predictions and explaining them to lawyers in terms of they will understand.

[00:39:50.41] HARRY SURDEN: That's great. It's a really good point. So you don't want attorneys looking at 170 billion parameters and nothing relates.

[00:39:58.18] KEVIN ASHLEY: That's correct. And I don't want them accepting the predictions uncritically. And the systems need to be able to respond to what if variations on a question or problems in a scenario where the attorney is able to probe it in a way. And you can't do that, I don't think, without have more legal knowledge.

[00:40:24.38] HARRY SURDEN: Great. Thank you so much. So now we're going to turn to the audience question. So Kevin, I'm curious, which of the questions caught your fancy initially?

[00:40:34.04] KEVIN ASHLEY: Have there been any strides towards developing a software that could potentially aid attorneys in predicting outcomes of court cases based on available data in terms, such as assisting an attorney in making a quick and efficient decision about whether the case is worth litigating?

[00:40:51.89] HARRY SURDEN: Great. So I'd love to hear your thoughts on that question.

[00:40:55.95] KEVIN ASHLEY: Well, we've seen a lot of research in AI and law, in text in predicting outcomes from the texts of cases. Of course, they're all previously decided cases. And you see the justifications in terms of machine learning experiments and in a predictive accuracy based on a canned corpus of cases.

[00:41:30.86] What you don't see is these tools being brought out into the real world and dealing with sort of new cases, new problems that confront attorneys. I don't think we've seen any empirical research that involves actual users making some use of these predictive techniques. And I do think that's really necessary.

[00:41:57.53] HARRY SURDEN: Great. Ansel, do you have any thoughts about this predictive analytics and outcomes?

[00:42:05.14] ANSEL HALLIBURTON: I sure do. Because that's what we were working on at Stanford when we met, Harry. So that project was the IP Litigation Clearinghouse, where we went out and got all the patent cases, all the dockets from the 94 district courts, and a lot of the key documents and analyzed them. And that spun out as Lex McKenna, which was acquired by LexisNexis. And so they've been doing some of that for a long time now.

[00:42:32.04] I think in many ways, that kind of analysis is fairly rudimentary. It can tell you a lot of useful stuff, like how long is your case likely to last now that you know which judge that you got within a district? Or it can help you decide where you should file for the best likelihood of success in the shortest case, which translates often into the smallest bill, of course.

[00:43:00.77] So there's things like that. I agree, I think, with what Kevin was saying that this is still fairly surface level. It doesn't get into the nuances of what the case is really about substantively, and to really reasoning on the basis of facts and arguments. And so I totally agree that that's a great area for expansion.

[00:43:25.55] HARRY SURDEN: Great. Meghan, do you have any thoughts about analytics, predictive analytics in the promise?

[00:43:32.98] MEGHAN MA: Yes, so actually what comes to mind immediately is Blue J Legal, who they have a rather-- and as Kevin had mentioned, it's contained. It's mostly two law firms or two companies. It's not for the general public. But they kind of look into predictive analytics from the narrow field of tax law,

tax and employment. And so this form kind of this type of software that has been assisting attorneys in this kind of space. But again, it's not open and available to everyone at the moment, but that comes to mind.

[00:44:14.69] HARRY SURDEN: Yeah, that's great. And I agree with everything that's been said. And one thing I'll mention, again, is that to the basic analytics that Ansel mentioned, just descriptive averages and things of that nature. Research suggests that attorney decisions can actually be improved just by basic analytics, let alone the complex predictive neural networks.

[00:44:37.31] But there also is evidence that large companies like Walmart that have repeat types of cases, such as slip and fall cases, tens of thousands of employment litigation, or building in-house systems that aim to predict. But like Kevin says, there's not a lot of public information about how good they actually are relative to informal attorney predictions. Let me turn to student, Madi, who has a question for the panelists. Thank you, Madi.

[00:45:10.98] MADI CARR: Hi. Sorry, I've been having some technical difficulties. So you might have answered this already, but I have missed the majority of this because my Wi-Fi and my computer are not working. So sorry if this is a repeat question. But I guess it's for all of you. Where would you say that AI is currently the most successful in law? And where do you see that projecting to be the most successful in five years?

[00:45:36.04] HARRY SURDEN: Ansel, do you have any thoughts on this?

[00:45:38.39] ANSEL HALLIBURTON: Yeah, I think the most well-established use cases are probably e-discovery and due diligence review. There's really established companies like your assistance for the diligence stuff. It's kind of become the standard of care, if you will. You probably ought to use that stuff if you're doing a big enough deal.

[00:46:02.50] And similar in e-discovery, although I think there's probably more talk about it than there is actual work happening. Although, it's definitely big. I mean, there's tons of vendors offering this stuff. And people save a lot of money and time using it. So again, at a certain level of litigation, it makes total sense to use these things.

[00:46:28.88] HARRY SURDEN: And thanks Ansel. Just for the law students out there who might not be sure of the terminology, roughly speaking, due diligence is when there's a merger or some sort of other business deal looking through large amounts of documents to make sure that nothing surprising, or untoward, or that might scuttle the deal, or mess up the valuation comes up. So it's sort of the attorneys just kicking the tires to make sure everything's OK. Kevin or Meghan, do you have any thoughts?

[00:47:04.11] KEVIN ASHLEY: I agree with Ansel's answer. The harder part of it is which will be most successful in five years. I'd like to think that some of the technologies that improve access to justice will be successful. I mentioned that we're working on a project that uses machine learning to identify sentences in cases that appear to be good explanations and statutory terms.

[00:47:39.72] And that is to say, they either provide a definition that isn't already in the statute, or a test, or examples, or counterexamples. And we're using machine learning to identify the issue that the court was deciding when it provided that explanation and the conclusion it came to with respect to the issue.

[00:48:02.22] If we could do this-- we're working with Cornell LII and the Canadian Legal Information Institute. It would be one way of providing some useful information for users, certainly for lawyers, but I think also for other non-legal types of users as well anywhere. I think that kind of approach, summarization with users purposes in mind, is an area that has a chance of succeeding soon.

[00:48:35.04] HARRY SURDEN: So Kevin, this is a great point. And James Hazzard asked an earlier question, why not make legal documents structured from the outset? So a lot of the work you're talking about is kind of implicitly and inferring things from data, kind of semi-structured data. Could you imagine or would you like-- if you had a second magic wand, if there were court cases and there is a definition of the term, if the judge somehow formally bracketed this as a term, and this is my definition in computer processable unambiguous form.

[00:49:12.25] KEVIN ASHLEY: Well, Harry, I've been in AI law since the '80s. And that has been a perpetual goal of trying to get judges to speak in more structured terms. And I don't think it can succeed. But think of the context like Cornell Legal Information service, where they already have a dictionary, the Wex dictionary, where you can hit a link on a term and get a definition. Here you could hit a link on a term and get not only a definition, but a sentence, an exclamatory sentence from a case that's a good explanation of the sentence. It's that kind of thing that I think could do.

[00:49:58.36] HARRY SURDEN: Yeah. And one example I'll say where the government believe it or not has produced structured data is the House of Representatives about 10 years ago took the US code, the titles of the US code, and released it in structured form with the imprimatur of the government on it.

[00:50:17.99] So I agree to you. It's not likely, but it was at least one example. So we can hope what you can imagine courts releasing decisions, and then having some official court representative go through and annotate it in a way that receives the imprimatur of the court. Not likely, but at least possible.

[00:50:38.53] KEVIN ASHLEY: Hope springs eternal.

[00:50:39.91] HARRY SURDEN: Hope springs eternal. Meghan, I'd love to hear your thoughts on this.

[00:50:44.74] MEGHAN MA: I think they're actually quite a bit of contracts and legislation is already rather structured. I think the stickiness is with case law. And in part what Kevin was saying is that judges can be rather narrative in the way that they like to write. And a lot of it is storytelling as opposed to maybe finding the facts or restating the facts. It's maybe crafting and constructing the facts that they want to kind of drive this narrative.

[00:51:14.75] And so one thing that might be interesting, actually, is whether there is a pattern in the way that these narratives form. And if there is a pattern, then we naturally can find this structure. So that might be an area of interest, but it won't be in the next five years. I don't think.

[00:51:31.70] HARRY SURDEN: That's a great point, Meghan. So one really interesting question here is, how do you see AI being used for reading long legislation? So I just had this experience. The infrastructure bill was passed and I decided unfortunately to read it. And it is far too long for any human to comprehend. So Kevin, do you see any prospects for summarization for either legislators or the public, things of that nature in the next five years?

[00:52:04.20] KEVIN ASHLEY: I have to say, no, Harry. On the other hand, I don't have much experience at all with legislative texts. I was involved in a project with the School of Public Health, where they had collected state statutes concerning public health emergencies. The statutes directed who in the public health system in the state was supposed to communicate with whom over what time period and so forth. And they developed a scheme for annotating those statutes. And we did some machine learning on it.

[00:52:48.03] And interestingly what they would do is having annotated it, they would create diagrams for a state with the participants in the public health system, and linkages indicating who is directed to communicate with what other entity in it. And then you could superimpose the network for Texas over the network for Pennsylvania and learn interesting things from that comparison. That kind of graphic representation of what's in a statute might be something that could be feasible.

[00:53:27.03] HARRY SURDEN: Meghan, this is really up your alley. I feel like giving your work on linguistics and text, do you have any thoughts about the capabilities for analyzing complex legislation that might be too hard to read?

[00:53:40.00] MEGHAN MA: Yeah, so I think there is quite a bit of research at the moment right now. Roses Code is looking into how do you translate legislation, or how do you kind of work together in a paired programming almost since. I know Khattalah, they do that with the French tax legislation.

[00:53:59.31] What's also interesting is sort of this other side that's, I think, spearheaded by Monica Palmirani on legal ML. And they're working on legislation, and how do you infuse more of that structure. So that going forward, it will be easier to kind of digest heavy, long legislative text. But at the moment, I think it is still a bit sticky, troublesome to go through that many pages. And I feel like it speaks largely to the opacity of the language.

[00:54:30.47] HARRY SURDEN: And just to follow up Meghan, would you advocate for a little more controlled or structure legislative language? Because there is a lot of structure. There's just not a lot of restrictions on conventions and things of that nature. Is that a promising outcome?

[00:54:51.13] MEGHAN MA: Yes, so I would-- sorry, I would advocate more structure, I think, on the condition that we figure out how to maintain some of the strategic silences. So what we notice, especially when it comes to legislative drafting, is that there isn't a lot of agreement. And it will take already far longer than what it already takes to kind of draft if we don't have the space for future negotiation and kind of that compromise.

[00:55:24.85] So I think structure, yes, more structure is great. But there are some things that natural language has done well, which is preserve sort of that flexibility and that elasticity. And some of those things are intentional. So I think we will have to figure out how do you do that, and how do you kind of look into crafting with flexibility.

[00:55:47.12] HARRY SURDEN: So more structure is not always desirable. In fact, it can lead to issues or problems. Ansel, do you have any thoughts about the legislation topic?

[00:55:57.41] ANSEL HALLIBURTON: Just a few. Yeah. And this is something I learned at Airbus. There's an interesting thing called simplified technical English, and it's a controlled natural language. Meaning it's an inventory of some number of words that you're allowed to use in an aircraft technical repair manual. And each of those words is defined with precisely one meaning. So it avoids certain kinds of ambiguity entirely. So that could be something to explore potentially for legislative drafting or contracts as well, which is the context I've been thinking about it.

[00:56:32.69] KEVIN ASHLEY: Harry?

[00:56:34.35] HARRY SURDEN: Yeah, go ahead, Kevin.

[00:56:35.52] KEVIN ASHLEY: Harry, you mentioned the word conventions and I think there's some potential there. In that project I mentioned, we were amazed to see the lack of conventions on simple things, like how to list items in a statute, or relations between subsections or subparagraphs and so forth. If we could just adopt some conventions to standardize that, it might be very helpful.

[00:57:03.42] HARRY SURDEN: Yeah, so there's a lot of ambiguity and statutes that's unintentional, right? So we might be able to make pretty good progress by elevating that implicit formality and making it more explicit, even while preserving the areas for intentional ambiguity that allow flexibility. And that's to Ansel and Meghan's point. Great, great point.

[00:57:26.85] And then we've got time for one more question. So Alec Walker says, many of these technologies being discussed already exist. The challenge for my experience is adoption. The legal

sector is not looking for this solution And typically, instead of structures within companies don't allow for such technologies to be explored or adopted. Do you see this changing? So attorneys don't want this, or maybe law firms have disincentives, but maybe corporate counsel, in-house counsel might have a different perspective. Ansel?

[00:57:59.20] ANSEL HALLIBURTON: So yes, absolutely. The incentives are very, very different. In-house you are viewed as a cost center. You're not making money for the company. In contrast with the law firm, where you as counsel are bringing in the money with your billable hours, right?

[00:58:17.20] And so in-house, we're always looking for efficiencies and incentives are much better aligned. And so as a startup, I made the call that we were just not going to pursue law firms at all. If they came to us with a compelling use case, great. But we were not going to go chase them. So that's my perspective.

[00:58:43.09] HARRY SURDEN: Kevin?

[00:58:44.38] KEVIN ASHLEY: Well, it's an attitude that education might change eventually, Harry. So for example at Pitt law, I teach a course on legal data analytics and AI. And we have a combination of law students and computer science or engineering graduate students, and involve them on working on projects.

[00:59:09.29] And I think that there is utility in getting law students to interact with technologists, and to learn to explain to them what we as lawyers, and to understand or try to understand what the engineering students are saying. And if we do that well enough, I think that once those people move into the legal practice area, that they'll want to make these sorts of connections. And they want to see what tools are possible. But it's a generational thing.

[00:59:45.01] HARRY SURDEN: Agreed. And Meghan, I'll give you the final word here.

[00:59:48.88] MEGHAN MA: It's quite a bit of pressure. But I definitely agree with Kevin from an educational perspective, and echo the ideas that Ansel had put forward as well. This is, I think, something that will be heavily tackled from the educational perspective and possibly lowering legal literacy, not just at the law school level, but how do we tackle kind of youth and young adults that are kind of going through high school perhaps?

[01:00:15.25] We see that law is something that seems to kind of be higher education, and that's where it goes. And we have a lot of disciplinary siloing, even as we grow up as kids. And so I think in part being able to work with technologists, as Kevin was saying, at a younger age and being able to lower the overall, I guess, barrier around legal literacy, and the age at which we're supposed to get acclimated with legal knowledge, I think will be helpful in terms of adoption and uptake on this technology.

[01:00:46.79] HARRY SURDEN: Well, I want to thank Meghan, Kevin, and Ansel for a really informative discussion, and for the ability to peer into the near future. And more broadly, I want to thank all the panelists and the Silicon Flatiron's faculty and staff for a terrific conference. I think has been really informative. I certainly have learned a lot. So I'm grateful for everyone. Thank you so much. It's been a pleasure. And we will see everybody hopefully in the future in-person.

[01:01:17.53] ANSEL HALLIBURTON: Thank you. Bye.

[01:01:18.82] KEVIN ASHLEY: Bye-bye.