Pioneers and Pathfinders: Jack Cushman

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Steve Poor
Hi. This is Steve Poor, and you're listening to Pioneers and Pathfinders.

Today, we're joined by Jack Cushman, director of the Harvard Library Innovation Lab, where he and his team are reimagining how library principles can shape the future of legal technology. Jack is a software engineer and appellate attorney who previously led the development of the Caselaw Access Project. He has also taught computer programming at Harvard Law School, served as a Berkman fellow, and sat on the board of the ACLU of Massachusetts. At the Library Innovation Lab, Jack explores how libraries can better collect, preserve, and share knowledge. His current work focuses on the fragility of digital cultural memory and the emergence of AI as a new form of knowledge.

In our conversation, Jack reflects on his journey from computer programming to law school, the evolving mission of libraries in the digital age, and the skills lawyers need to thrive in an AI-driven world. He also shares his perspective on how we should measure the impact and reliability of AI systems in legal practice.

Thanks to Jack for making the time and engaging in such an interesting conversation. Let's take a listen.

Jack, thanks so much for joining us. Thanks for making the time. I appreciate it.

Jack Cushman
Steven, thank you so much for having me.

Steve Poor
You're the director of the Library Innovation Lab at Harvard. Let's talk a little bit about the path that got you there. You start by going to law school, I guess the first question is, why law school?

Jack Cushman
Yeah, and I don't quite start by going to law school, because I was a computer programmer even before then, and this is about 2003 2004 at the time, you would read slash.to follow the technology news. So I was reading slash dot, and a lot of the technology news turned out to be actually law news. And the huge example for me at the time was the Google Books project, where they were scanning millions of books from the world's libraries. And the tech news was good news, Google has scans of all of the books. You're not allowed to read them. You're not allowed to do anything with them, but they have them locked up behind a, you know, a legal wall. And it was one story after another, like that, that what was possible was as much a matter of law as technology. And I started to say, if I want to engage with the world, I need to understand law just as much as I understand code.

Steve Poor
That's a great reason to go to law school.

Jack Cushman
It was a great reason to go there. And I loved the philosophy of law school the way it has. You're arguing about the meaning of words, but at the end of the day, someone goes to prison or not, it really

matters where you come out. So I loved that intellectual engagement. And I think that was what led me into appellate law following law school.

Steve Poor
What caused you to jump from being an appellate lawyer into going to the lab?

Jack Cushman
The awkward reason is just that it's litigation was not something that I was cut out for as a matter of personality. I think litigation requires so much conflict day by day, and I admire the people I worked with who could do it for 40 years. I wasn't one of those people, so I really started looking for something that would have more, more of an element of, you know, building things, and that's what led me to start hanging out around the Berkman Klein center, and then the Library Innovation Lab.

Steve Poor
That's fascinating. Let's talk a little bit about the innovation library. You're now the director have been for five years, if I've got that right, four years?

Jack Cushman
Yeah, four years. I think, although it the time passes by, you know, I'll believe you if you think it's five.

Steve Poor
I don't, you know, I think of things as pre pandemic and post pandemic. It was, was post pandemic.

Jack Cushman
So this was, this was mid pandemic. So this was about a year in when I, when I took over. So I think four years and and it was an interesting time to do it, because everyone was remote and our work was not urgent. It's important, but it wasn't, at the time responding to the pandemic. So people were pretty turned inward, and it was a moment of taking over when, when the lab was at an inflection pint.

Steve Poor
Talk a little bit about the lab. What's its mission? How long has it been around? What's it do?

Jack Cushman
Sure, the Library Innovation lab's mission is to bring library principles to technological frontiers. And what that means is we're not working at the library just to make tools for our current students or our current faculty, although they certainly use them, but we're trying to understand what libraries should become in the future, and we're trying to do that by going to wherever it is that people are accessing knowledge. Now, when I say we, I'm talking about a group of about 15 folks that includes lawyers and computer programmers and designers and organizers, librarians, certainly, but people trying to get to where the knowledge is happening now and understand what's missing. And a great example of that would be what we've seen of changes in the past, like Wikipedia, where for a while you get libraries saying, You all go write the world's knowledge on a website, we're going to stay here with our books and having real knowledge, things that have been fact checked and things that we know who read them. And you go do that. And certainly not everyone in the library community did that, but it was one response. That, but it was one response, and what it meant is that Wikipedia was shaped, not always with the insight that librarians had developed over the centuries. A lot had to be rediscovered, and we want to take the next technological changes that come through and have library principles be built in from the start instead.

Steve Poor

Talk to us a little bit about the evolution of the library, at least from your perspective, in terms of prior technological changes. I mean, when I was a law student, the library was where they had these things called books.

Jack Cushman
That's right.

Steve Poor
You could actually hold in your hand and flip the pages and look around. And my wife was a librarian for a while, so...

Jack Cushman
Wonderful.

Steve Poor
I know they're no longer. There are such things as books, but the library function and the librarian's role has expanded dramatically.

Jack Cushman
That's exactly right, that the books have not gone away, but there's a lot of other things going on as well, and in some ways, as there always have been. I'd like to start with what is consistent about libraries across the centuries and across technology. Libraries exist to collect and preserve and share knowledge to empower people. You know, those are our steps. We collect the stuff that's out there, we make sure it is kept safe and intact and ready for future generations, and then we share it with you. Libraries have different policies about who can come in the door, but they're as wide as they can be, and we share them with as many people as we can on equal terms, and not just random information. You know, come in and we say, here we have 30,000 boxes of discovery about taxes. We say we have the thing that you in your community need, for some people who come to a library, it is 30,000 boxes of discovery about taxes, but it matches what people need so that they are empowered when they come through the door. That's the thing that's been consistent. The thing that changes is what it means to empower people with knowledge used to change through history and then has changed. Really fast in the last three to four decades. So I think you can really go back very far, and it's helpful to do that to understand that we're not the first ones having to make these kinds of transitions. So if you imagine the printing press being invented and popularized, it's not like we didn't have libraries before then, but they were designed very differently. They were designed where each book was incredibly precious. You had a small number of them. You could maybe remember all of the ones that you had. You had to be very careful about who could touch them. The printing press changes that. Now you need things like catalogs for large number of books. You need policies that allow anyone to come in. You need to think about funding in a very different way so the institution gets completely rebuilt around that technological change, fast forwarding through a bunch more technological change. The next one I think really hits, is databases and for us in the legal field, that hits with Lexis in the 1970s. I forget that the name for the original Ohio consortium that kind of did a lot of that development of computer databases. But again, libraries have to completely be reshaped around this new capacity. And you see some things that are wonderful echoes of today, where people really didn't trust databases when they landed. You know, judges were saying, Well, I looked in the books, I looked in the database, I saw different cases. What does that mean? What's going on with your technology? And the technology had to reshape itself to meet judges and lawyers and practitioners and law students where they were, and also all of us had to reshape our brains to be able to engage with databases and how they were different from books. So that's a change that I think the law actually was right at the front of, but that had really hit by the time I was, you know, going to law school in 2005 we spent a week without access to the databases where

they made us look things up in books, and they said, here's the database. And I never went back to the books, and I had a wild experience. I heard from a student the other week. They're now doing the same thing with AI tools, so you need to spend a week with the database where you just have to use terms and connectors and search for exactly the documents you want, and then say, and by the way, here's the, you know, the Lexus or Westlaw tool that will use AI to find those cases for you. It's like, hey, it found the same cases, but it did a lot faster. And those students are now having the same experience of, Wow, you made us use, you know, the old tools that I was taught to use for a week, but I'm probably never going to use them again.

Steve Poor
Well, there's some validity to that. You know, knowing how to go look up a book is is useful knowledge?

Jack Cushman
Absolutely, I think you do need the foundation of, why are things made this way? It's hard to understand the AI tools that we're engaging with now without understanding the databases that undergird them that are still there, and the books that undergird those that are still there. Our new tools rarely end up completely replacing the old ones. They just end up kind of building on top.

Steve Poor
One of the changes I've observed at least in community libraries, and it may be different in the law library for operation like Harvard, it's the question of accessing information that the community comes in now, looking at the library as a focal point, particularly underserved parts of the community come in, looking at The tools that libraries offer to collect information on a not necessarily looking for a book, but looking for information in the more general sense. Have you seen that change? Am I making that up?

Jack Cushman
That's completely right, and I think you're right that the community libraries have led that because they've had to. They're right at the forefront of the changing expectations that people have, because anyone can walk through the door at any time. And I think what it's highlighted is that there's a kind of magic to libraries that goes past any particular service that they offer. So sometimes it is we're in 1850 and your community just needs to have books about what might be killing your livestock, and your local library is going to make sure that happens. It was actually a little later around the turn of the century that libraries really spread, but we're just going to make sure you have the books that you have the books that you need, but later on, you get a lot of people want DVDs now, and for a while, libraries were bigger lenders of DVDs than Blockbuster was. They probably still are bigger lenders of DVDs than Blockbuster is. And then, as community needs changed, they evolve. But what happened is it started to become clear, as people are less interested in books and more finding things on the internet, that libraries also serve this role as a critical third place in your community, as a place that isn't your home or your workplace, but where everyone is welcome, where rich and poor gather, where you can always find a bathroom and a water fountain, but also, incredibly, you can always find someone who has a minute to listen to whatever problem you have and do their best to solve it, which is a resource that is hard to find anywhere else in the world. I think attorneys can really recognize it, because when a client comes in and if they can afford to pay, we'll say, whatever your problem is, I'll see if I can sort it out, or find someone who can. A reference librarian Sort of is that, for anyone in the world who comes through the door and not forever, they won't give you their entire day, but for a few minutes, they'll listen and think with a kind of professional obligation, much like lawyers have about whether they can solve the problem that you have. And it turns out that's incredibly stabilizing for a community. You need that space that is not about if you can pay or if you have a particular need that we're ready for, but just as what's going on? What could I do? It means that public libraries ended up overstretched in some ways, because if people come in and they say, Hey, I have no food, what can you do for me? Or, Hey, I'm

having a mental illness, a challenge that I don't have any support for. What can you do for me? Often, the answer is, as a reference library, and I can do nothing for you, and I feel bad about it, or it is, you know, causing chaos here. And so they've gone through areas of trying to draw in more and trying to narrow, but I think that the end of kind of needing reference books to answer your questions has not meant at all the end of the need for that resource.

Steve Poor
Let's talk a little bit about some of the projects that the lab has taken on. You've had the case law access project, which we'll talk about. You've had a number of other projects. How do you resources are finite? You can't do everything. I'm sure you get great ideas coming across the transom all the time and lots of things you'd want to do. How do you decide how to deploy resources? How do you pick among the projects?

Jack Cushman
That's a great question. We've been through a bunch of different eras of trying to answer that question, because I think it's the question that an innovation lab always struggles with, never has a good answer to. And the classic thing that happens if you have an innovation lab, which many firms try too, as well as universities, is, for a minute you're innovating, and then you're not anymore. You launch and you have two people, or 20 people, or 200 people, but within six months to a year, you have that many projects, and those projects are sticky, and now you're just doing those. You're no longer an innovation lab. You're a doing the first project we picked lab there is that we've gone through in our lab. There was one that was really focused on pure kind of experimentation. And this is an era that the library director at the time was John Palfrey, and he had this vision that was just, let's make space for people to see what they would build if they had space to build it in a library which has these kind of wonderful experimental projects come out, like the awesome box, where, when you're turning a book to a library, you can either put in the regular return box or the awesome return box if you think the book was awesome.

Steve Poor
Oh, that's fabulous.

Jack Cushman
Right? I mean, people loved it, and it just kind of wonderful, like creative, hands on projects. The next era that we got into this is around 2014 or 2015 it was led by the current library director, Professor Jonathan Zittrain, also co founder of the Berkman Klein Center, where he was saying, Let's build some some platforms that will fix sort of fundamental problems in the world wide web, different approach, but another great approach to how you do innovation, and that's the area where we got projects like the case law access project, open casebook.org, our open textbook remix platform, and also perma cc, our link rot prevention tool targeted for judges and law firms and for law journals that came out of this research. And I think it's a great example of how we picked up projects. It came out of this research that looked at links in the Supreme Court and links in the Harvard Law Review, and found that half the links, web links included in Supreme Court cases had rotted, no longer worked. Three quarters of the links in the Harvard Law Review no longer worked. And it wasn't just that they didn't work, but that you could actually go buy the domain that had expired and change what the site said, so you could change what the Supreme Court had been referring to when they cited when they cited to a resource.

Steve Poor
Oh, that can't be good.

Jack Cushman

It's not good. It's wild. And certainly for lawyers, if you if you think you know, how does precedent work, you're not supposed to be able to go back and buy something that a Court cited to and make it say something different. You can, you know, you can change the meaning of a Supreme Court case by doing that.

Steve Poor
God, if only I'd known that when I was practicing daily.

Jack Cushman
It's a good strategy. No, it's not a good strategy, but it's a problem. It's not how things should work. So Professor Zittrain, kind of, one of his mottos is, you know, everyone talks about the weather, but no one ever rolls up their sleeves and does something about it. You know, what would it look like to do something about this? So we spun up a very quick prototype of, what if a court or a law journal could submit a link to the Harvard Law Library and have it kept on file by us, and we'd make a copy of it, we'd give you back a short link, almost like a bitly link, and that can be included by the court or the journal right next to the original. And that's what we built. And it took off, and now about three quarters of American law schools use it for their law journals, maybe a dozen or more state supreme courts, the federal courts now all use it in a bunch of agencies. It was used on both sides and the impeachment trials all kinds of stuff. And it just fixes this problem that you know before you could go and buy the thing. Now you can't, because you'll get caught, because the permalink will show what was really there. And that's kind of one approach to innovation lab. Is just, here's a problem, we do a little research to show that it's a real problem, throw together something that would work to fix it, and then see what the interest is. And that's one where the interest was real and so it grew. I'll tell you about the other way that happens, but yeah, I'll pause, you know, what do you think of that?

Steve Poor
I think that's Well, first I didn't realize that was a problem.

Jack Cushman
I'm happy to have brought you some bad news for today.

Steve Poor
Yeah, no, no, you fixed it. I think it'd be fascinating. How did you figure out that that was the problem? It's not obvious to me.

Jack Cushman
That's right. I think that the layer that happens before is the layer that is about play and exploration, going back to that awesome box era where you just have to have a lot of conversations with a lot of people and try to pull the future forward a little bit, try to understand if things keep going the way they are now, or if surprising new things happen, what would be different. And I think that conversation came out of, if I remember the lore, it might have been Professor Zittrain having a conversation with Professor Lessig about how the Internet was rotting and what to do about it. And they said, Well, what about court cases? That might be a specific case where the rot is really important. And decided to do that first experiment. I may not remembering who was in the room correctly, but it was that kind of conversation. Just find interesting problems and poke at the edges of them, and it connects a lot to things that we've worked on recently. We've recently launched our public data project to try to preserve sort of the public data that you and I and everyone owns, that is often published on the Federal Web, as well as many other websites, and that can easily disappear when the federal government changes policy priorities, when it lets people go, when it decides to approach publishing differently, you all of a sudden get the census data that was there is different from the census data that is there now, which is not how libraries

are supposed to work, just like the link that we cited to is different than it is now. Is not how it's supposed to work. And our project came out of kind of having that conversation and seeing that as our risk earlier than many other groups did, because we'd been talking for years about the risk of our cultural memory vanishing, and we started to see signs that there might be major shifts happening at the federal level, that cultural memory sensitivity was already there. So we were able to leap in and save a ton of stuff before many kind of changes happened, resulting in an archive of all of data.gov about 300,000 data sets, resulting in an archive of all of the Smithsonian data. But that kind of thing happens really just because we're chewing on these problems long before they are problems, and trying to think about what would be the shift that happens that would really make this become acute?

Steve Poor
Must be an exhilarating experience to be able to be in an environment where you can have those kinds of conversations and come up with those ideas and then actually execute on a solution.

Jack Cushman
Do you know it's, it's the part that I love about the job, kind of the finding those rooms where, like, I should be in this room, just because something interesting might come out of it that we need to know about. And it's also the part that terrifies me, because we are so tiny, and it's this is What's strange about library work. We may be the largest Library Innovation Lab. I don't know what you know, what would define that, but we may be the biggest group of people who get to be in one room and work on this kind of problem, and at the same time, we are so tiny, compared to, let's say, the court system, compared to the textbook publishing industry, that is one place that we work, compared to the systems that publish public data that we capture. We're 15 people, and so there's kind of the constant sense that we're getting one thing and missing 1000 others.

Steve Poor
I hear that, but you've, you've accomplished an enormous amount with a team of 15 people. It's sort of amazing. What's been the impact of generative AI, the Big Bang explosion from a couple years ago on your work?

Jack Cushman
Absolutely, it's a huge impact. And I always start by saying, Yes, this is real, because I think there's, there's such a wide range of views on how seriously should one take generative AI? On the one hand, you have people saying yes, it's going to kill us all. You have people saying no, it's going to bring about a utopia. Bring about a utopia. You have people saying no, it's like Bitcoin. It's people kind of hustling a technology just for the money. And as library researchers, we're embedded in information science, and we get to talk about, well, what is it really once you take away all of the set dressing, and what it really is is fundamentally important. It's a new technique for finding the patterns that exist in any collection of information and bringing those patterns to the surface and making them executable, making them able to run themselves as simulations. So if you're thinking about information science or thinking about library work, this is a fundamental change in how our work operates, whether or not it turns out to, you know, put everyone out of work, or, you know, create a utopia, or anything else. It has already changed what we do. A very practical way to think about that is, you know, Harvard has a ton of different collections. We have the collected works of Emily Dickinson, the collected, you know, private papers of Emily Dickinson. And that means that Harvard is now sitting on an Emily Dickinson simulator. Because the idea behind a generative AI is to take any pile of data and create a simulation of itself. And so any collection we have, like Emily Dickinson's papers, it becomes a simulator that's obviously very different from the real thing, like a simulation of a hurricane is not a hurricane, and a simulation of Emily Dickinson is not Emily Dickinson, but a simulation of a hurricane can tell you whether to evacuate a city,

and we're now sitting on simulations of many other things that can tell you many other important facts about the world, and certainly including law, like our collection of case law.

Steve Poor
So we're in a world or moving into a world of AI generated knowledge. So what role do the libraries play in that? Is there a distinction between AI generated knowledge and human generated knowledge? You talk a little bit about the distinction between Emily Dickinson and its synthetic Emily Dickinson. Where are the lines?

Jack Cushman
Sure, I love that question. The way that I would think about generative AI is we now have a wonderful information tool to make us faster at solving informational problems that we want to solve. Steve Jobs said that he wanted computers to be a bicycle for the mind. I think the best way to think about it is that generative AI is a chainsaw for the mind. It will cut through information problems for you incredibly quickly, and it will also cut off your leg if you point it in the wrong direction. And many times, when I use it, I think to myself, I've just solved an important problem that I'm glad I had this for, and I wouldn't know how to explain this to someone else. I'd be scared to hand them this chainsaw. So here's the way to think about generative AI from an information science perspective, it can solve problems if you get the right pieces in place and if you use it in the right way, but you need a set of things for that that we're still just starting to understand. And I could give you four or five of them, if you don't mind me going into kind of, you know, talking through a list.

Steve Poor
No, no, please go in a couple of give us a couple examples of what you're talking about. No, but it's fat. It was it was fabulous. It was fabulous. How much do you think lawyers I know you teach, you teach class at Harvard in programming for lawyers. How much do you think lawyers need to understand things like what you just described, the way these systems work? Do they need to be coders in this new world. What skill sets do you think lawyers ought to have?

Jack Cushman
Yeah, that's a wonderful question. I don't think they need to be coders. I think they can be if they want to. I think they do need to be able to do computational thinking. That's the purpose of teaching and coding for lawyers. And beyond that, in the AI era, they need to be able to think about the consequences of these tools, and that's very different from being able to implement them yourself. I think if you want to, if it interests you, then go ahead and learn how to implement it yourself. You certainly can. If you're able to go to law school, you can learn this too. And that's, I think, a core part of what I want students to take away. But what you aren't allowed to sort of skip is, what does it mean that we have computers now? So the kind of things that I haven't taught coding for lawyers for a few years, but the kind of things that I would cover are things like, if we use automation, we could file 10s of 1000s of cases at once in the same time that it would take to file one. And that actually does happen. It turns out that in some years, like half of the copyright infringement suits that are filed are filed by one company that is extorting people over kind of evidence that they've downloaded pornography the wrong way. But because they now have a for loop, they have an ability to automate something that previously would have not been automatable. The system has to be able to respond to that. Has to be able to deal with half of the litigation being filed by one plaintiff. And so if you're not thinking about the change that computers make to our functioning as a society, I think you're really going to struggle in many cases beyond that, as we get into AI, the information chainsaw, sort of rewrites all of the parts of our society. It rewrites how law firms are going to function. It rewrites how your clients business functions. It rewrites how judges think. It rewrites the speed that you're going to have to operate at. So I don't think it's okay to say, like, Well, I'll let the nerds figure that out. I think it's important to have an intuition for it. But I also

don't think that necessarily means that you need to go to class and start kind of learning the like, let me draw you a map of a neural net so you can see how it connects. I really follow Professor Ethan Malik here, who's written a lot about how businesses should adapt to this thing, and says, look, what you need is 10 hours trying to use the model on your problem. That because the models are so good at some things and so bad at things that are right next to them, because they change quickly, it's not that you need to find an expert at models and do what they say. It's that if you spend 10 hours trying to solve your problems with it, you'll be the world expert on world expert on how good it is at your specific problem, and sit down in front of the best one that you can get Now, sit down with attention and just use it for times when you're curious about like, I bet it can't do this. So that's really what I push people toward, is get your hands dirty with it and start to have intuition so that you don't feel like you're following someone else in what's happening. Not at all. That's exactly right. And I think that's where Professor Malik's idea of the jagged frontier is so important. The notion that the best of these models can be is a very good sometimes and very bad other times. And that your first interaction with it, in some ways, tells you very little, because maybe you lucked out and it did something incredible, and you think, Oh, these are amazing. Or maybe you got unlucky and it did something terrible, and you think, Oh, these are useless. These are useless. And actually, it's jagged. It's sometimes good and sometimes bad, and like a chainsaw, you have to hold it at the right end and use it carefully to make sure that it works out, which means that you do need curiosity, you need openness to engage with it, to make sense of how it works and how it doesn't. And it's fine if you don't want to do that for technologies that aren't going to dramatically impact your field, but if it's a technology that is going to that is going to dramatically impact your field, I think you have to find somewhere in you that curiosity and willingness to engage. And I don't know, I try to coach people to say, like this is mostly a shift in your thought process or your approach, more than is a shift in your practices. It's about saying, find the version of you that is either mad about this or curious about it, but like, is emotionally engaged in it. Somehow, I like to do things in front of an audience, like, pull up chat GPT and ask it, like, how would I make a bomb to blow up this room right now? And I do that because all of a sudden, instead of people saying, like, Oh, I'm here at this conference to, like, be told some trends in the industry, they're like, what's gonna happen? What would chat GPT say about that? And like, is this guy gonna get arrested? Like, if he was, who would do it? Like, where is this thing hosted? Who's watching it? What is the privacy on this? All of a sudden, the same questions that you should be thinking about, feel like kind of tangible and unforgettable, because you're engaging with your your full brain, the emotional side of your brain, too, and your learning just accelerates. You can do that for yourself. And I think if you're kind of like you said, if you're at the firm, bring it the stuff that you're sure it's going to fail at. Bring it the stuff that scares you to ask it. Bring it something that you think is ridiculous and you would never show anyone this. But like, what do you think it'll do? Like, you know, maybe don't use it first for your real matter. Use it for something that you've always wondered about, or, like, a made up client that is, like, absurd. Whatever it is that engages your complete brain and learning about it is what prepares you for the world that's coming. Sure. So if you're building any kind of AI system, and it could be, you know, an artificial lawyer, it could be an artificial best friend or therapist, you know, whatever, the thing is, there's a set of requirements it has to function. And the first requirement is that it has to have grounding. Grounding means the ability to see the real world and be talking about the real world. So if you're doing law, that means it has to see all the up to date cases. It has to see all the information from the matter in front of it. It might have to know a lot about the real world to understand what it means that someone hit someone with a car because they spilled coffee on themselves. It might need a lot of facts. So that's grounding. And if a system doesn't have the grounding it needs, if it hasn't read the recent cases because they're not in its database, it cannot possibly function. So one role for libraries is, all of a sudden, it really, really matters whether the systems that we build have access to the world's knowledge, which is what we do and what we collect. And that's, by the way, where our institutional data initiative spin off came from last year, just trying to look at how do we get the knowledge from libraries to be in a more accessible form, both for model makers and for humans. So that's step one is you need this grounding. Step two is you need indexing. Indexing means pulling out of your kind of

world of knowledge the stuff that you actually need to solve the problem in front of you. And this is actually where lawyers spend most of their time, if you imagine the kind of army of junior associates who are sorting through boxes of documents that was indexing of saying, Hey, we have the information in here somewhere. But if we can't find the smoking gun document we need at the moment, we need it in trial. It doesn't matter that we had it that has gotten incredibly important in the AI world, very practically, because of what you might have heard of as context windows, each model that you talk to has just a certain number of characters back. It can look in its memory, but before that, it cannot see it, and those have gotten long. It might be 200,000 tokens that can fit in its context window, but if you can't get the answer to the question you're asking into those 200,000 tokens, then whatever comes out will be garbage. And that's where you get terms like rag retrieval, augmented generation. That was an early way of talking about, do we have the systems in place that can pull in from our universe of knowledge, the stuff that needs to be in this context window and the systems after rag are much more sophisticated, but are asking the same question, how do we get the right stuff in? So you have the grounding, you have the indexing, and the next thing is just a sufficiently smart model. And I think this is the thing that you know that the newspapers have been arguing about, the kind of the thing that you hear about is, you know, it was GPT four, but now it's GPT five. We've made it so much smarter, and it now passes these passes these benchmarks instead of those ones. What really talking about there is, suppose the answer to your question was, in that context window somewhere, would the model be able to find it if it had found the right documents and dumped them in? Can it put them in the right way to write a persuasive brief, or will it misunderstand what's important and export nonsense? I think the interesting thing about this moment is that the models are now sufficiently smart for many, many important things. It is often not the problem in making AI systems that just the model can't understand what to do if it's given the information. It isn't usually the problem that it doesn't have the information in the first place. And that's interesting, because that turns it from a kind of basic science question of, will we ever have one smarter than now to an engineering question of, definitely it will have more data in the future. Definitely will have better indexes in the future. So we can start to predict improvements that have nothing to do with the kind of, you know, Mystery Box of, how much smarter can these things be? And if you don't mind, I'll add the last two of kind of what you need for a functional system. So we need our grounding, we need our indexing. We need a sufficiently smart model, which we often have. And have and then we need benchmarking and monitoring. We need to know if what we're building is getting better or worse. Because a very common thing that you do when you first launch an AI system is you you say, Well, it seems to work. It wrote a brief that looks pretty good. So great. Am I done? And the problem is, well, what about next week when a new model comes out and you swap it in? Did that get better or did it get worse? What about when you say, Oh, I added a bunch of new data and I've changed my indexing. Are you walking towards quality or walking away from it? So much of industry now is all about, how do we benchmark whether we're succeeding at the things we actually care about? Because if you don't have a good compass, a good North Star, you're just going to end up in garbage over time, which very much connects to I think the last thing that's important to remember about these systems, which is that they will only answer the question you ask. If you ask the wrong question, you will get the wrong answer, and that means there's incredible leverage right now, incredible value right now, in being able to articulate the precise desires that you have in a precise enough way for the model to help you, sort of knowing what to strategically ask becomes the important thing to do when you're using this information chainsaw. And that's true in general, that if you if you get better at prompting these things, you can empower yourself. It also connects to why bias is such an important topic and models that you'll hear about all the time. When we talk about bias, we're talking about a incredibly common mistake that we make, which is to think we're asking one question, we're asking another. So an example would be if we take a bunch of immigration judge decisions, the papers that went in, and the decision the judge made, and we're going to make a simulator of an immigration judge, and the models will do that, they'll come out with something that you can give at the papers of an immigration case, and it'll say what an immigration judge would say, plus or minus. And then the question is, well, can you deploy that to answer what should happen in immigration cases? And you really should not,

because you didn't ask How should immigration cases came out. You asked, How do immigration judges make them come out now? And you now have a wonderful simulator of if you took these papers before a real human, imperfect judge, what would happen? And it'll tell you, well, they might be biased based on your race or your gender. It'll tell you they might care about this irrelevant thing. They might tell you something different, if it's before after lunchtime. And simulator will be a wonderful simulator of answering that question, but it won't be a simulator that can tell you here's how the case ought to come out. For that, you have a benchmark that cares about how it ought to come out and hold it accountable to something else besides how did they come out in the past? And we use the word bias for that because it just happens all the time that we think we're asking one question when we're asking another. So we need an important word for that. But beyond that, it's just kind of the classic mistake of the wrong tool for the job. You have a biased model because you're using it to answer a question that you shouldn'tbe using it to answer that was such a such a long explanation. Where did I leave?

Steve Poor
That's such an interesting point. I mean, one of the challenges we've had as we've rolled out AI based tools within the firm is sort of that exact dynamic where the position we take is just try it, just take some time and go through it and use it, and roll up your sleeves. And lawyers are expecting, don't just tell me what the answer is so I can know which button to push. And it doesn't work that way, does it? I know we've run a little bit over our time. But if you will tolerate just one more question, what do you have in the pipeline at the lab that's got you excited that you're looking forward to, that we should be on pins and needles waiting for sure?

Jack Cushman
I think a lot of our AI research right now is really fascinating and really will connect with the legal field. We're looking at things like, how would we know if AI was really affecting the legal field as dramatically as we think it's going to, because, again, everyone thinks the answer is different. We want to know, you know, let me ask you, and I'll try asking right now, if you had to put some chips down on this is the number we'll see change if AI really is starting to make an impact, what metrics would you care about? And we're going to ask everyone this, but you know, what would you start with?

Steve Poor
That's such an interesting question, I'd want some type of metrics around quality to make sure that whatever it's doing, it's getting the right cases, it's getting the right answers, it's creating the right deal documents, that it's producing results that are of acceptable level of quality that keeps the process going. Then the second metric I'd want to see is what human in the loop components do you need to still have to achieve that quality level? And theoretically, the answer should be a lot less, right? A lot less time, a lot fewer people.

Jack Cushman
Absolutely.

Steve Poor
Those are the first two things that leap to my mind. Such a great question.

Jack Cushman
I love that answer. And I think you can really see people working on that one with the recent OpenAI research that collected kind of four to eight hour tasks from a bunch of experts in various fields, and came up with a metric that well, our model is not quite as good as humans at solving this batch of hard 48 hour tasks, but it's not that far away either, and we can see a real trajectory over time. You can imagine wanting a dashboard where you're watching that for legal tests and saying, how close is it

coming to it can now solve four-to-eight hour tasks just as well as you know your mid level associates can whether you're a mid level associate or you're a partner, that number is the one that should definitely have your imagination going and people give all kinds of answers. One person said the thing that I would want to know is lawyers struggle with alcoholism and depression. Is that number going up or down as computers come in?

Steve Poor
Oh, isn't that interesting?

Jack Cushman
I never would have thought. This is what we get by asking different people, kind of, you know, for you, what would tell you?

Steve Poor
Great observation, that's fabulous.

Jack Cushman
And I don't have a guess. I mean, I can imagine that you start to feel disenfranchised, and you start to tune out and feel worse, but I can imagine it starts to take over the less interesting parts, and you start to feel more engaged. I don't know. So there's a million like that, and that's one thing that we're doing, is trying to bring people together around that question. Bring people together around that question. The other two I'll just share briefly. One is about understanding just how good models are at specific doctrinal fields. So we have some good kind of general purpose you know, how good are models at legal stuff, benchmarks? But what if you just want to know how good is this model at fair use analysis and agreeing with an expert on whether a scenario is fair use. It turns out we can automatically generate benchmarks for that from Fair Use exams and get a quick ranking of you know, here's the model you should talk to if you want a good answer that, and if you add a prompt to it, here's whether it gets better or worse. The ability to automatically do doctrinally specific benchmarking, I think, is going to shift some of the conversation about models. Another thing that we're going on is, how do we coach law students so that models help them instead of hurt them. Because a real concern for professors right now is this is the first class of 1Ls who can just have a machine do their reading for them. It's 10pm you could read the next 80 pages, or you could have a model like give you an outline that'll get you through class tomorrow. And the answer is, you have got to read those 80 pages, because that's the weightlifting that is going to give you the mind you need. But are they going to do it? And we're building tools that will kind of help to be there with you and be that coach that's standing by you, being like, do the weightlifting. You can do it. I'll tell you if you did it right, rather than what I think a lot of companies are building now and offering to students like that crutch that'll just say here, I'll help you out. So we think it's so important to start to build tools that will really help students make the right choices there.

Steve Poor
I think that's fascinating, because it's not just going to be applicable to students. It's going to be applicable really, to lawyers as they go through their entire development, professional development stage.

Jack Cushman
Yes, that's exactly right.

Steve Poor
We struggle with the same question is, once you get into the practice, how much heavy lifting do people need to do to get to the stage down the road where you need them to be in terms of wisdom and

judgment and experience, yet at the same time, produce the results for your client at a cost and a speed that justifies your obligation to your client?

Jack Cushman
That's right, and you can ask this for yourself too. What sort of virtual buddy Do you want helping you be a better version of yourself instead of a worse one? And it can be your drafting buddy who says, Hey, if you're writing this sentence of this brief, you might want to cite to these things too, or pull these things from the record, but it would also be your education buddy that says, like, Hey, I'd given your interests. These are, you know, the few things I would read today that you might want to stay on top of. It can either make you lazy or it can make you sharp, and it's not going to choose for you. It's sitting right there saying, like, Hey, want to be lazy. I'll help you. But if you get developed the mental habits of turning it into a gym, asking it to challenge you, instead of asking it to be a crutch for you, then you yourself can really develop in your career in a different way. And I think you're absolutely right that that's something that lawyers at every stage need to be really aware of.

Steve Poor
Well, you're doing such fascinating work, Jack, I could keep this conversation going for a long time, but we've run out of time. Thank you so much for your insights and your time and sharing with us this fascinating stuff you're doing at the lab.

Jack Cushman
Thank you so much. And you know, as I said, the conversations like this are what feed the work that we do. So please stay in touch. And I'll say that to your listeners too. If there are conversations that you'd like to have, I'd encourage them to reach out to me.

Steve Poor
Absolutely. Thank you so much.

Jack Cushman
All right, take care.

Steve Poor
Thanks for listening to Pioneers and Pathfinders. Be sure to visit thepioneerpodcast.com for show notes and more episodes, and don't forget to subscribe to our podcast on your favorite platform.