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MIT COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE LABORATORY (CSAIL)

ARTIFICIAL INTELLIGENCE: IMPLICATIONS FOR BUSINESS STRATEGY

ONLINE SHORT COURSE

MODULE 3 UNIT 2
Casebook Video 3 Transcript

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THOMAS MALONE (TM): So that's call centers. Now let's talk for a minute about AI in the legal world. Talk to us about what's easy and hard for AI to do in the legal world.

FRANK LEVY (FL): Well, what's easy for AI in the legal world now is, what's easy in AI in general is again, it's repetitive processes, it's routine processes. The first application that really got a lot of attention was document classification in the discovery phase of a trial. So, if you're one party in a trial, you can get, before litigation, you can get a request from your opposing party to say you have to produce all documents that are responsive to a particular subject. And so, you have to go through a whole large volume of documents that you have and say well, which ones are responsive and which ones aren't? And as people went to digital documents, the volume of documents that had to be searched through became just enormous and so this became extremely expensive and there was a lot of pressure to automate the process. Initially, the automation took the form of looking for keywords, but keywords are problematic because a given idea, a given concept can be expressed in a lot of different ways and if you don't have the right keyword you're going to miss it. So eventually what happened was a machine learning application, where a set of lawyers will take a sample of the documents that have to be classified and they will classify that sample. And then you're running a machine learning natural language processing algorithm on that sample to say all right, what pattern of words and combinations of words and words in three strings together and so on are forming the protocol that these lawyers seem to be using to say this one is and this one is not responsive to the request for documents? That began to save a lot of time. Now again, it's a situation where what comes out of this is not this is responsive, and this is not, but this is responsive with probability 0.83 or this is responsive with probability 0.9. And a typical firm, a typical client will say well, let's see, if this document is responsive with probability 0.9 we know we're going to just turn it over to the other side and that's the end of it. If its estimated probability of being responsive is 0.4 or less, then we can forget about that. The ones in-between we're going to have to use human review to figure out whether we have to turn these documents over or not.

TM: So, it sounds like here's a case where you need people and computers both; the people train the machines in the first place to recognize what's responsive and then the people deal with the intermediate cases that are hard to be sure from the machines.

FL: That's right. And what this gets at is a kind of question that's going to come up on a bunch of different situations. This is really routine work, this particular document classification, because the lawyers are forming a protocol and then just applying it and applying it. But it took a long time to automate that work because the information that was being processed into is this responsive or is this not, that information was language. Until you could get a representation of the language that a computer could handle, you couldn't get to the routine part of the work. Now that you have language processing that can get at that, now you can just sort of run with it.

TM: Okay, great. And what are some other things that AI is good for in the legal world?

FL: The other place in the legal world where AI is making a big inroad right now is in what's called contract management, and this is a job that comes up when you're doing mergers and acquisitions. So, a firm that is acquiring another firm, as part of its due diligence it has to go through all the contracts of the firm being acquired to make sure there are no bombshells in there. And in particular there are about 100 different clauses that can cause real trouble. For example, there might be a clause with a big customer, which allows the customer to cancel a contract if the firm is acquired. So, you're looking for clauses and the clauses can be expressed in many different wordings. A given clause can be expressed in many different wordings and that now is increasingly being automated, that you can just run through in the software looking and saying this clause is in this contract, this contract has this clause, this contract has this clause, and so on and so forth.

TM: Great. So, it's a certain kind of routine processing of things that are expressed in natural language.

FL: That's right. And again, before you could get a representation of the language, you could never automate something like that. But once you get the representation of the language, it's very routine work.

TM: So, the key thing that the AI is doing is taking a string of letters and representing it as the meaning of those words in a way that the machine can then do some processing on.

FL: That's right.

TM: Great. Well, thank you very much, Frank.

FL: Hey, my pleasure.

TM: Did you understand all the concepts covered in this video? If you'd like to go over any of the sections again, please click on the relevant button.