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Office of the Vice Provost for Advances in Learning



MODULE 3 UNIT 4

Video 1 Transcript

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CHRISTOPHER MALLOY: Machines can now beat humans in chess and even most recently in the video game “Go,” and the next question is can machines beat humans in investing? And then, relatedly, do we want them to? And what are the risks and ramifications of the increasing application of machine learning and artificial intelligence to the investing world?

So in this module, we’ve explored a series of cases from Recorded Future to BIA and others examining exactly this question. And along the way we want to think about and dig into here in this wrap session, can you even design a business that can make money doing this, applying machine learning into investing?

It’s one thing we might be worried about is this machine learning and designing strategies based on machine learning such a great idea for all investors?

LAUREN COHEN: Yeah, I mean look, it seems like a great thing, right? I mean machine learning is essentially an evolution of a statistical method, right? So it’s essentially like you going from horse and buggy to an automobile, and that was a great thing, right? It can move faster, it can make turns better, you can get fuel, it’s more dependable, and seems like that’s what you would get from machine learning. So, if we were using some quantitative techniques before, then these are just better quantitative techniques. So what could be the downside?

Well, there are a few downsides, right? And so the first is that it’s a little black boxy, right? We don’t know exactly what’s going on with these machine learning techniques, even the people who develop the methods aren’t exactly sure—

MALLOY: Because most of them aren’t trained in finance—

COHEN: Yes. Yeah, yeah, about what’s going on with these. And then, the clear potential downside is that what would happen is you’d overfit, right, is that essentially you put all this data into your machine learning model, it would tell you to do something, and then whatever it told you to do, it wasn’t really what you should do going forward, but just how it could have maximized the past. And the key to finance is not being able to describe the past. It’s not a history field. It’s being able to look toward the future.

MALLOY: Agreed, and then even if you can describe the present perfectly, you know, who are the winners and losers here? Because as we know in investments, it says zero sum game; you have some people are winning and some people are losing. It’s not like machine learning is make everyone better off in this area, right?

COHEN: Yeah, well and it’s not— so machine learning, right, still up for grabs for sure – unclear whether it’s positive or negative. But, one thing that seems like it couldn’t go wrong with is data, right. One other thing we’ve been able to do now that we’ve never been able to do in the past or not nearly as much is being able to collect very specific and very fine data on individual people, what they do, how they transact, the kind of decisions that they make, the kinds of behaviors that they make, all these things it seems like would help predict those people. And look, at the end of the day, economies are just aggregations of all those people, right? Like the U.S. economy is just the aggregation of all those individual decisions that are being made.



MALLOY: Oh, agreed. And then the question is from the point of view of running a business, running a FinTech company, who's going to pay you for that data? And then you run into this zero-sum game again, and this equilibrium problem again, potentially, which is that if you're going to sell some data that a fund manager is going to use to trade, they're not going to want you to sell it to anyone else, right?

COHEN: Yeah, and well not only that, but data is just an input too, right? It would almost be like you go to a restaurateur and you say, "Okay. Oh we have this awesome new oven, here are all the parts to make the oven. Here are all the metal parts and you just—"

MALLOY: —Which is not what the managers want.

COHEN: No, no, they want the oven, right.

MALLOY: They want the platter delivered to them perfectly.

COHEN: Yes, and that's not what data is going to be, right? And so, the tricky part is although you see all these FinTech startups, like a Recorded Future, that's collecting all this data, they had trouble conveying the value of that data without creating a strategy. But, like you said, the second they created a strategy, then the first person they went to sell that to, they said, "Oh, this looks awesome. Now don't sell it to anyone else."

MALLOY: Exactly. And the same problem that BIA had as well is when you develop this great product, you either decide to do it in-house and trade on it yourself, but trading is a very big, different business than collecting data. And that's, I think, another area where a lot of these FinTech companies are sort of struggling. Do they want to become a trading firm, or do they want to just become a data harvester?

COHEN: Yeah, and so I think the big open question with FinTech in investment management, and this is true today and will be true in the future, is how do you make money in investment management without going all the way to starting a fund yourself?

MALLOY: Exactly.

COHEN: And that's something that I don't see any piece of technology or any part of FinTech being able to solve, right? That's a problem today and it will be in the future. And I think that's a fundamental issue that all new FinTech startups in this space will have to solve.

MALLOY: So the question we want you to think about and that we're posing to you is what are the prospects of applying machine learning and artificial intelligence to investing? And that's a question that's going to be important to you whether or not you're on the investing side or on the entrepreneurship side. In any way that your assets are being deployed, you're going to want to know and think about if a machine is behind the scenes.