



iLLUminate Blog Transcript: Carter Lyons on AI in Finance

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- STEPHANIE VETO: 00:13 Welcome to iLLUminate, the podcast for Lehigh University's College of Business. I'm your host, Stephanie Veto. Today is October 7th, 2025, and we're talking with Carter Lyons, this year's Donald M. Gruhn Distinguished Finance Speakers Series guest. Mr. Lyons is a 1997 graduate of Lehigh's College of Business, and he is the co-CEO of Two Sigma Investments, a financial services company at the forefront of artificial intelligence and investment management. Hi, Carter. Welcome to the podcast.
- CARTER LYONS: 00:45 Hi, Stephanie. Thank you for having me.
- VETO: 00:47 We're interviewing in person today at Lehigh. Whenever I'm on a university campus, there's always an energy and excitement, like a newness to it. And the weather when it's beautiful makes it even better. Being back at Lehigh, is there anything that you really missed about your time here?
- LYONS: 01:03 I was saying this morning, the last few times I've come back have been in February. Not as great of an environment to walk around and see that energy. So this time, a crisp fall morning in October, it was fantastic. And I was saying to one of my own daughters last night, "I feel like I've just graduated from here." It's been almost 30 years. And there are a lot of things that are different, but there are so many things that are the same. And I feel like that young, energetic student again with a lot of life before me and a lot of opportunity. To come back and see that through students is one of the primary reasons I come back so often. It's just so fun to be here. And I love meeting with the students, meeting with the faculty, just hearing all the exciting things that's happening on campus. And it's just a nice way to refresh my own energy levels from the work world that I've been doing for so long. And just to get back on campus has been great.
- VETO: 01:57 And you're right. The beginning of the spring semester really is never fun for anybody. [laughter] So what did you major in? And how did Lehigh help you prepare for your career?
- LYONS: 02:07 I like to joke that I feel like I'm one of the only people of my age group that studied what I've done professionally. So I majored in finance, came here, was in the business school from day one, wasn't really sure what I wanted to do. And the curriculum forces you to take marketing classes, economics classes, management classes. The one thing I was very sure I didn't want to do was accounting. I never really liked the accounting classes, but I liked the finance classes very much. Ironically, my first job out of school was as an accountant. So I guess I took a step back, but I've been working in the financial services field now for almost 30 years, and I still, almost every day, have some situation where I think, "Oh, I learned this in school. I learned this in school." Some of those situations, I say, "Wow, I should have paid better attention in that class." But it's been a fascinating multi-decade run with the Lehigh finance degree as a foundation.



- VETO: 03:05 Tell me about Two Sigma Investments. What is it? And what's its vision?
- LYONS: 03:11 Yeah. So Two Sigma Investments, we actually call ourselves a financial sciences company. So while I do use my finance background, much of what we do is based more on the scientific method. And what I mean by that is we take a scientific approach heavily influenced by technology and computer engineering to predict markets. So what we do looks very similar to any financial services firm, but we take a different approach. And the vision that the founders of the company used 25 years ago has largely played out to be very accurate and is very relevant for not only today, but for the future. And that is the world will continue to be automated, will continue to generate data. And in order to make successful investment predictions, you have to utilize technology and data science to be successful. Terms like data science didn't even exist when they founded the company. Big data as a term didn't exist. Cloud computing didn't exist. Artificial intelligence did, but certainly not like it does today. So it's been fascinating to see how the world has moved our way, and it's exciting for the future as well.
- VETO: 04:16 Yeah, 25 years ago, artificial intelligence was like Terminator style. Not what it is-- and it's moved so fast. It's like, "Oh, this is it." And it's becoming so clearly defined and continues to just keep snowballing in this crazy way. It's funny that you said that. It just was way different 25 years ago.
- LYONS: 04:38 It was different. I joined Two Sigma about 15 years ago, and we debated in my very early days, "Should we lean into artificial intelligence from a marketing angle?" And it was actually me who said, "No, the world's not ready for that. That's too scary. That's too computer-driven." And look at it today, and every company it seems in the world is trying to remarket themselves as AI-driven, or they're literally changing their website domains to have AI in it. So I think we were right that it was too early 15 years ago, and now, today, it feels funny that the whole world is trying to lean even more into that just from a marketing perspective.
- VETO: 05:12 Last year, you were named co-CEO of Two Sigma. Congratulations.
- LYONS: 05:16 Thank you.
- VETO: 05:17 What first drew you to the company and how has it evolved? We just talked a little bit about it, but let's go a little deeper.
- LYONS: 05:23 Yeah, sure. So I left Lehigh and moved back home to the Bay Area and worked for a firm that was based in San Francisco for also about 15 years, a little short of 15 years. And it was my first introduction into systematic or quantitative investing. And when you spend a few days inside a quant firm, you start to think that way. And we really believe that that's the best way to invest. So I was a complete convert from the very early days at the company that was called BGI. And I would have probably stayed there my whole career. Ultimately, that company was bought out, and it allowed me the opportunity to look for something different. And Two Sigma came calling and I thought, "Well, this company was a smaller company looking to capitalize on a very successful first 10 years, but try to really scale itself up." And I thought my personal experience, my belief in where the world was going, aligned very much with what Two Sigma had already achieved, but was really positioned well to achieve going forward.



LYONS: 06:23

And I went and had a conversation with my family who was very happy to live in Northern California. And I said, "Do you want to go on an adventure?" And I dragged my wife and three very young kids from the suburbs of San Francisco to Manhattan. So we went from suburban living to urban living, all on this idea that Two Sigma could be a great place to be. And what a great trade. It's been a fantastic life experience for us and just a tremendous professional experience as the company has thrived, created a lot of opportunity for me personally and my colleagues, and provided a lot of fun along the way as well.

VETO: 07:00

And before becoming co-CEO, your role was to work closely with other company leaders to drive growth. You were responsible for developing new relationships and strengthening existing ones. Talk about the importance of relationship building in business and really for anything.

LYONS: 07:20

Yeah. I think even going back to talking about artificial intelligence, so many of the tools that are being created for everybody these days will take some of that work that used to be very manual and make it very automated. But what the computers and the technology can't do is this. They can't have a conversation sitting across from the table. They can't have a smile and a laugh about the fall being the perfect time to be on Lehigh's campus. What the humans are going to be continued to ask to do is interpret the analysis. Collectively, humans will spend less time creating the analysis, but you still have to understand it and then you have to explain it. And I think one of the things that I found, and this comes from my Lehigh experience as well, is not necessarily what you learn in the classrooms, but what you learn making friends, working in small groups, making presentations in front of small groups, medium-sized groups, sometimes large groups. And I think that socially today, it's easier for students, and frankly, adults in the working world, too, to not do as much of that. You can be connected through your phone. You text your friends, you Snapchat your friends, whatever. You don't even make phone calls like we used to, let alone getting together and have that human interaction. I think that's sad for society, but also a lost business skill.

LYONS: 08:37

So I spent my first 15 years literally flying all over the country, then flying all over the world, just sitting down with people who ran college endowments, corporate pension plans, ran estate pension plans, and talking to them, "What are your financial objectives, and how can Two Sigma help you meet your goals?" And then, sure, there's a lot of analysis that goes into that, and you have to run the numbers and look at all that. But ultimately, you're creating a human connection, building a relationship, and so much of the business world, regardless of whether it's the investment management industry, anything in finance, really anything, is relationship-driven. And I think we don't invest enough in ourselves to make sure that we have those relationship-building experiences. And that has been the key success for me personally, and certainly I've seen it from others as well.

VETO: 09:26

It's funny, access, screen access, and being able to do things digitally has been able to make the world smaller and more accessible. You can have a meeting with someone in Singapore. You can have a meeting with someone in California. And still, I feel like that screen has sort of taken away that level of connection where it's like, "Oh, that joke didn't really-- [laughter] that didn't work out too well." Or, "Oh, wow, this person really likes me. I can tell by their energy." There's something missing there. And even



in the workforce, I love a flexible schedule and hybrid work and the opportunity to have the best of both worlds. And still, there is, I feel-- maybe this is an old way of thinking, but being able to personally connect with someone and know how they feel, and maybe I'm being too passionate about something or not passionate enough about something, I feel like a lot of that's lacking right now. And so do you still thrive on that human interaction?

LYONS: 10:33

Absolutely. Nothing replaces that human interaction. And I think prior to March of 2020, I never worked a day from home in my life. It just didn't occur to me. If I needed to be home for the cable guy or the plumber, I would take the day off. I admit I would probably roll my eyes a little bit at people who worked on any of my teams saying they were working from home that day and say, "Okay, that just means you're checking your phone every hour instead of every few hours." And then COVID hit, and we realized that technology had come so far that you could still stay connected. Sure, it was a 2D world instead of a 3D world, but it was better than just conference calls. But then as that went on, I realized, "No, there's still nothing like an in-person meeting." So sure, instead of seeing an investor of ours four times a year in person, maybe now we see them three times a year in person or two times a year in person and two times on a Zoom call. And that's better. That's more efficient. That allows you that flexibility. And I probably went to more of my girls' high school sports games than I ever thought I would because I could be more flexible and spend a little bit more time at home. But there's nothing like collaborating in person. I just don't believe that you can build the same type of relationships over a screen or over a phone than you can having a meal with someone, sitting across the table from them. And I think we have the best of both worlds now. And I value that so much.

LYONS: 11:58

And hopefully, we can find that balance and find a way that, "You know what? You don't have to be in the office for 12, 14, 17 hours a day, five, six, seven days a week. You can still be more productive on certain things at home." I often say that. If I need to type something or review a document, I'm better off doing that from home, where I can actually just close my little office door and no one's going to interrupt and I'm not going to have as many distractions. But if we're going through an idea session or trying to build teams to work on complex problems together, that is so much better and more effective done in person. So I love that we're forced to figure out how to do things from a remote perspective. And now at Two Sigma especially, we have a nice hybrid model. But I think also watching my kids do remote school, I mean, what a terrible experience that was. And my girls were in middle school and elementary school for those years. Never would I want them to go through that again.

LYONS: 13:04

Being in the classroom and attending class, working in small groups, that is how the knowledge doesn't just come from the textbook. It doesn't just come from the lecture. It's being there, seeing that body language that you were referring to before, seeing how other kids react to things, hearing the questions, forcing you to be more engaged. And we all know you're on that Zoom call and you can find yourself staring out the window or staring at another screen. You can always daydream in class, and certainly I was guilty of that when I was a student here, I'm sure, but you're much more in the moment, you're present in person, and I want to make sure that students understand that and value that as they go from their academic life into their working life.



- VETO: 13:45 Excellent, yes. My daughter was very young during that and was hitting her head off the desk going, "I don't want to do this." And I was like, "This is so sad."
- LYONS: 13:54 That was so sad.
- VETO: 13:55 So, anyway. Two Sigma employees, finance professionals, physicists, computer scientists, and engineers. How does the company build a culture where all of these different disciplines are able to collaborate effectively?
- LYONS: 14:11 I think an overarching descriptor that you didn't include that I will is we have a lot of introverted people. We joke-- I sit on the 10th floor of our office, and I feel like they've taken every extroverted team and we've crammed them all on one floor. We have so many people who are just genius off-the-charts IQ and would be perfectly happy not having human interaction. So we think very creatively about how to do this. And a lot of the ideas that we use come from the technology companies. So I'm originally from Silicon Valley. And I remember when Google was starting and before that, Cisco, Apple and Facebook and whatever, they would build these campuses and they would offer different things to try to get people off their desks. And one of the easiest ways to do that is we literally have a cafe on every floor, and the idea is people want to go get something to eat or drink and they'll have a spontaneous conversation, forced human interaction. And we've gone so far as to have different types of drinks and snacks on different floors to force people to move around the building. So around Memorial Day to around Labor Day, I switch from coffee to iced coffee. I can't get iced coffee on our 10th floor. I have to go up to the 16th floor. And I'll walk in and I'll just be in line sort of waiting to make a coffee in the morning, "Hi, what's your name? What are you doing?"
- LYONS: 15:28 And the overarching belief is that we know that innovation is what will make our company successful, and collaboration is the key ingredient to innovation. So we have to find ways to get people out of their comfort zones to understand that the best solution to a problem is to have people look at that problem from multiple perspectives and to force that collaboration. So we have chess tournaments, ping pong tournaments, poker tournaments, backgammon tournaments, speaker series. We have a yoga studio. We have a gym. We have all these different ways of just getting people to take a step away from their work, interact with others, and then maybe come back to their desk with a fresh perspective on the problem that they're working on or a fresh team of people to think about the problem in a different way. And ultimately, that's how you build teams. And that's been one of the key ingredients to our long-term success for Two Sigma.
- VETO: 16:18 How does the company balance human judgment and data? You talked a little bit about this early on, but let's jump into that a little bit more.
- LYONS: 16:26 Yeah. I think that everything starts with the data, but there's going to be that subjectivity at the end. And that's where experience matters. So while the vast majority of our trading every day is done by machines-- I mean, we trade thousands and thousands of securities 24 hours a day, about five and a half days a week. But there's a human overseeing that process and making sure, "Does the computer know everything that we know?" There are times in the markets where you might not have any historical data. Right now, the federal government is shut down. We have some of those experienced in the past, but maybe not enough of those to really have a



strong data-driven perspective of, "What does that mean?" So we might turn things down that rely on government data that's not available. Those are the easier ones because you can see those coming. An analogy we often use is that's like a speed bump. If you're driving along in your car and you see a speed bump, what do you do? You slow down, you go over it, and then you speed back up. So you see a government shutdown coming. You look at any exposure you might have. You slow down. Right now, we're going over it. And as soon as our friends in Washington figure their stuff out, then we'll speed back up. But also sometimes things happen that you weren't expecting. And COVID is a great example of that.

LYONS: 17:40

Sure, there were other pandemics in the past, but there were hundreds of years before. You don't have any data. The computers don't know what's going on. That's where you need the humans to step in and say, "You know what? We don't know what's going on. So for us, let's take our risk down. Let's figure out what's going on." If you don't have conviction the computers don't have the data to make that decision, you still need that experience. And I think that's one of the keys to what's happening with AI and all the innovation that's occurring across the world. You still do need to have those humans who've gone through things before, who have the confidence and the experience to make the necessary judgment calls. They'll be data driven. They'll have as much information as they can. But you still do need to have that pilot in the plane who takes over from the autopilot. Sure, the autopilot is doing the vast majority of the work these days whenever you fly somewhere, but you still want that person who sounds like they've been doing it for 30 years because that experience does matter.

VETO: 18:36

Your firm manages around \$60 billion in assets and employs approximately 2,000 people globally. What I love, though, is that two-thirds are in research and development roles. I think this is such a critical point, given that we're hearing about companies across all industries rebranding and letting staff go to focus on AI. How does Two Sigma differentiate itself when using AI?

LYONS: 19:01

Yeah. So I think two-thirds in research is-- that's been a ratio that we had from when we had 10 people, and it becomes a guidepost for how we think about our staffing today. And what we know through data is that you're only as good as your go-forward, right? So I can sit there and I can talk to a prospective investor of ours, and they can say, "How have you performed over the last 1, 3, 5, 15 years?" And as good as that may be, that doesn't give them full confidence that we can generate that going forward. So what they're ultimately investing in is the research engine that we invest in. And what we know is what worked for us four years ago, at best, works less well today. It's a highly competitive market. People are trying to find those sources of return. And if we found something first, great, but someone's going to find it after us, and then it'll work less well. So we love to tell people that we will turn over our almost entire investment process every four years. And that takes an enormous amount of people, an enormous amount of data, an enormous amount of technology. But I said people first, because without the people, you wouldn't know, "What are the ideas that we should test? What are the things that we've tested in the past that have failed?" And that's research.

LYONS: 20:19

I love talking about that here on campus because all the research that's done here-- I mean, most research leads to no new developments, right? And we talk about our



research process more like baseball. A professional baseball player who's successful 30% of the time, that means they're a .300 hitter. I know they use more advanced statistics today, but a .300 hitter over a 10-year period is going to be a Hall of Fame baseball player. There's very few professions in life where if you're successful 30% of the time, not only are you considered successful, you're considered wildly successful. And I love that about our research process is we want to set up our humans with an environment that allows them to test as many ideas as possible. And I think that's one of the key contributors that AI is allowed is they can test things faster.

LYONS: 21:04

And we say that all the time, "Let's fail as fast as possible," because then you can move on to the next idea. Sure, there's a lot of consternation in the world, and I'm a father of two undergraduate students myself. And a lot of that entry-level work is under some pressure to be automated away. But you still need-- if you need experienced people, like we were talking about before, to make those judgment calls 10 or 20 years from now, well, they have to start somewhere. And what we see is that we can-- by utilizing the tools that are available, not only at Two Sigma, but on campus and just in the world itself, we're finding that people can be more productive more quickly, and we can get more output out of every employee, but we still have a never-ending list of ideas.

LYONS: 21:46

So it still is-- one of the constraints is, "Do we have enough humans to test it?" So I think that's exciting, and I think that's consistent with a lot of technological advances over our lifetimes. It usually allows for greater opportunities, more job opportunities, more work for people to do, and it's actually more valuable work. You're working on the more interesting stuff. You're not just sitting there cleansing data. AI tools can now cleanse data. You're not building the first version of computer code. AI tools can do that for you. And then you can work on the more value-added stuff that's just more interesting. And hopefully, you get more value out of your work. You feel more productive, more fulfilled than some of the entry-level jobs that I had, which were-- whew, were they boring.

VETO: 22:32

[laughter] What do you think are some challenges or some things that might give you pause when it comes to AI and investing?

LYONS: 22:38

Yeah. I think it's a lot of trusting the data. It's one thing you could say, "Well, here's a multi-hundred page transcript." Someone could take the transcript of this podcast and then say, "All right, what did the co-CEO of Two Sigma say?" And you have to trust that output. Right now, you might hand that to a junior member of the team and say, "All right, can you summarize this for me?" And you trust the human to summarize it in the right way. We hear about this through some of the AI tools, about hallucinations, and even completely made up footnotes or citations. So then you have the AI tools doing things, but then you have humans doing the same thing, and that doesn't work. So I think they are-- I mean, especially large language models, it's been a huge leap forward, but it's not replacing everything yet. So finding the ways to use the tools to make the work more efficient, but then still finding where the humans can add the most value, I think society is trying to find that. Certainly, academia is trying to find that. I was here on campus a few years ago right after the first version of ChatGPT was released and talking to professors about going back to blue books, which gave me a shudder. [laughter]



LYONS: 23:49

And actually, I think I got a cramp in my hand from the days of writing long exams. It's like, well that was like the days when my first class here was learning how to build spreadsheets. It's like, no, these are tools. You have to actually incorporate them into the curriculum so that students are not fully reliant on them, but understand, "Well, what can the tools do versus what should I be adding?" And I think then it gets exciting about what the opportunities are. But we still haven't worked it out, right? And one of the easiest ways to look at this, if you look at ChatGPT's usage statistics, they were going up, up, up, and up all of last year, and then they fell off a cliff in June. College is out of session. So literally you see-- so it was mostly college students using it to help-- hopefully help write outlines or idea-create, not writing papers, but it fell off the map. Like, "Okay, we're still utilizing this for maybe not the most productive ways," but I think in general, people are recognizing it. I know that the faculty here and the administration here is thinking about how to incorporate tools into the curriculum to make students more productive, and certainly we're doing the same thing in the workplace.

VETO: 24:56

Since being co-CEO, what's one thing that has surprised you about leading the company? I know you've been there 15 years, but you've been co-head man for one year now.

LYONS: 25:10

It's just different when at the end of a discussion, all eyes turn to you. Whether it's just, "What's the decision? What are next steps? What's the follow-ups?" it's very easy when you're not at the top to question decisions or say, "Oh, that's not what I would do." But I think the cliché exists for a reason. It's a bit lonely at the top. And I do have a co-CEO, and we can laugh about this. So Scott Hoffman and I will often finish meetings and we'll just go and sit on each other's couches and sort of have that conversation. I'm like, "Well, no one's coming by. I guess it's up to us." And it's gratifying. It's exciting. It is stressful, for sure, but it's also fun. And for me, it was easier. My partner came from outside the company. And I think that perspective has been massively helpful because he just looks at things and I will often give him a few questions to ask that maybe would be rude if it came from me, where he can be the new guy to ask a question. It's a question, "Why do we do things certain ways?"

LYONS: 26:19

And we are a very innovative company, but every company can say, "Well, why do you do it this way?" Well, we've always done it that way. And we want to make sure that we're constantly refreshing everything that we do from how we hire and train people, how we deploy them, hybrid type policies, type of research that we do, to much larger business decisions. But it's funny. I think most people still treat me like same old Carter. The newer employees don't because I was in this position. I mean, we had our internship class come by this summer and they wanted to call me Mr. Lyons. And I was like, "No, my dad's not here. I'm Carter." So I think as each new person joins, they'll think of me like the new Carter, and the folks who've worked with me for a long time, they still treat me like same old Carter. And I don't want to lose that. That's something that would be not so fun.

VETO: 27:13

I know you have a busy day today, but I have one more question. Looking back, did you ever think that you'd be working with data scientists and engineers in the financial industry, especially coming from Lehigh? [laughter]



LYONS: 27:26

No. I was very intimidated by my friends who were in the engineering school. I didn't even like going into the academic buildings where engineers were. Those were the smart kids. I really just couldn't grasp what they were working on. And us business school kids, we tried to find the good balance. But one of the things that I've been working on with the relationships I have here still is breaking down those walls. And I know that Lehigh's put a lot of programs in place, not just to have the siloed approach of, "I'm a student in the business school. I'm a student in arts and sciences. I'm a student in engineering," because everybody needs it all. My company and my entire professional life has been within finance but with a massive lean towards computer science and engineering. And I would say to finance students five or six years ago, "You should take Python classes or learn how to code. You need to at least understand what that means." And then in the Arts and Science Colleges, you need to be a good writer, a good communicator. And that part of the curriculum needs to be across all of the schools. And I know they're working on that because I never thought I would spend as much time as I do with engineers again. I still have a soft spot in my heart for Lehigh being the engineers. I haven't quite accepted Mountain Hawks yet.

VETO: 28:40

Oh, no. [laughter]

LYONS: 28:42

Just kidding. That happened when I was here and I was a little skeptical, but it's fascinating. And I do think that if you want to be an engineer and that's all you ever want to do, fantastic. But most of my friends who were engineers as undergrads and went into engineering roles, they eventually become managers. And the key to management and managing people is communication. And that's more human resources. That's some of the softer skills that maybe is not part of the curriculum in an undergraduate engineering program. So I find it fascinating that, as I said at the top, I rely almost every day on things that I learned in class. I wish I had taken a few classes outside of the business program when I was here, but I think that the way that they're thinking about curriculum these days is much more horizontal and much less vertical. And I think that's exactly right.

VETO: 29:31

Carter, thank you so much for taking the time to be on the show.

LYONS: 29:35

Thank you for having me.

VETO: 29:36

That was Carter Lyons from the class of '97 and co-CEO of Two Sigma Investments speaking with us about his Lehigh experience and his perspective on AI in the investment industry. This podcast is brought to you by iLLUminate, the Lehigh Business blog. To hear more podcasts featuring Lehigh Business thought leaders or to follow us on social media, please visit business.lehigh.edu/news. This is Stephanie Veto, host of the iLLUminate podcast. Thanks for listening.