

FINTECH ONE-ON-ONE PODCAST 296-PANKAJ KULSHRESHTHA

Welcome to a special edition of the Fintech One-on-One Podcast, Episode No. 296. This is your host, Peter Renton, Chairman and Co-Founder of LendIt Fintech.

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Peter Renton: Today on the show, I'm delighted to welcome Pankaj, he is the CEO and Founder of Scienaptic. I'm not going to try his last name because it is a very challenging last name for English speakers, but anyway, Scienaptic are one of the leaders when it comes to AI in underwriting, we're going to be talking all about that today. We've got a great show planned covering lots of different topics inside, you know de-mystifying AI, talking about how it's been used today, how lenders are leveraging it and why it's the way of the future. So, with that, welcome to the podcast, Pankaj.

Pankaj Kulshreshtha: Good to be here, Peter.

Peter: Okay. So, let's get started by just giving the listeners a little bit of background about yourself. I know you've had quite an interesting career to date and why don't you give us some of the highlights.

Pankaj: Sure. And for academic purposes, my surname is Kulshreshtha, don't try it, your tongue can.... (Peter laughs) but really, I think the best way to describe myself is I'm the geek that got out of the basement, basically. So, I was doing this PhD at the intersection of Economics and Computer Science several decades ago and GE advertised hiring modelers in their Center and all business that they were trying to set up. That was a relatively novel thing at that time so I said, okay, instead of going into academics why not try a corporate job in this interesting area for a few years and then we'll see where it goes.

Obviously, I've never been back to academics, but really at GE I had the opportunity to work with all of their capital businesses, did a lot of work with their cards business which is now called Synchrony, worked with their commercial financial businesses in areas of vendor finance and so forth. I even worked with their reinsurance business which is now part of Swiss Re. So, did a lot of work, protection of data and risk management and CRM so I really feel that, you know, for a geek this was almost the most ideal outcome.

I didn't know anything else, I didn't have all that strength and what I had strengthened I got exposed to a in a very good manner, with a very good company and it has become the thing. Everybody is talking about AI and so forth so I feel blessed that I have this opportunity to do what I'm doing at Scienaptic.

Peter: Right, right. So then, maybe you can tell us the founding story, what was sort of the aha moment, what led you to start Scienaptic?

Pankaj: In a lot of ways, Peter, you know, the truth of these things is not that interesting really. The truth is that my whole career was spent...I didn't know anything else apart from data like risk management so financial services so if was going to do something, it was going to be in this area. But,

one story which was probably the founding story, but it did start me up and a lot of my team members in the early days actually see me quite animated about that.

So, this was early days in our startup and I wanted a particular credit card, it was one of the premium credit cards that one of the well known brands was offering. I applied for that credit card and I don't do that kind of stuff very often, I don't carry multiple credit cards and so forth and I got rejected. As you can imagine, that was very hurtful, right, I was a senior exec and I was like oh, I write (inaudible), for God's sake actually so how can I get rejected and then I started looking at my own credit score just to understand what actually happened.

And then I found that essentially what was happening was that my scores would go down every....you know, three times in a year, my scores will go down by 30 points or so because I was maxing out on my limit picking, basically, a vacation or booking a vacation or something like that basically. And because of that, you know, the credit card company or the bank will not approve me for that particular product and I'm going here thinking oh, this can happen to somebody like me who's basically in the premium segment, where the service levels are supposed to be a lot higher. What happens to people who actually have not such a great credit history, I mean, what is the opportunity for them to get credit.

And that brings another part which is as a society, Peter, it's very clear and COVID has shown us very clearly that lots and lots of people.....their jobs are getting disrupted because of the technology disruption, because of the macro economic disruption and so forth. As a society, we have to make more credit available really in a responsible manner and basically I said, let me get to the bottom of it and figure out a way to change the instrumentation that is available to a large number of lenders so that credit availability can actually be increased. The was some of the inspiration.

Peter: Right, right, okay. I know we have a bunch of new people who joined, this is a live podcast. Just want to remind everybody, we will be taking audience questions at the end of the show so stick around for that. I have a bunch of questions I want to get through with Pankaj first. So, maybe we can step back and say, today, you know, there's obviously.....AI's getting a little bit more air play, people are certainly not as negative about it as they were five or ten years ago, maybe we can just step back before we dig into AI and talk about what's wrong with the standard underwriting tools that lenders use today?

Pankaj: You know, Keynes said famously once, when the facts changed, I change my opinion, what do you do, sir? (Peter laughs) That actually simply tells us what is wrong with underwriting. it's just too slow to change. Everybody knows that stories like mine are very common really, right, all of us have had personal experiences. I've had so many stories of this kind of stuff in Uber rides when I talk to people who are really trying to find a way to get some credit so they can pass the hump that they have got stuck in their life so really we know the story. In fact, what happened.....another eye connection to deliver another story.

I went to our banker in New York City and really this was, again, earlier days. I was trying to get a corporate credit card, I go to the bank branch, which itself, frankly, shouldn't be needed, right, you shouldn't have to go to the bank branch when you have been banking with the same bank. They

should be able to offer products to you proactively, that did not happen, obviously, but I go there, applied for a corporate card because I wanted to move away from putting all these business expenses on my personal credit card and then paying them back. I go there, you know, they said, okay, you come back or we get back to you after a couple of days. When they didn't get back after ten days, I called them and they said, oh, your application has been declined. Again, I was a bit upset because, again, I've been banking with them for a while and I actually know the chief risk officer and CEO of this business. (Peter laughs)

So, I walked into the branch and I said, you know, what do you think I can do to actually get this corporate card. She says, I can see your profile, I would really think that, you know, they should have given you the credit, but this is the, you know, underwriting department and we can't change anything there. So I said, oh, would it help if I actually go to the CEO or CRO and ask them to help and her eyes lit up, Peter. She was almost like, okay, but if you are going there you should tell them that we have so many issues with the backend systems and she told me a list of thing that she would like to get some attention from senior management.

So, the point is, underwriting systems are not able to behave intelligently, they don't take the intelligence with frontend (inaudible) is getting about what the customers need and so forth and just the policies and backend is so inflexible that banks end up losing the opportunity to grow as well as, you know, provide more credit to people.

Peter: Right, right, right, okay. So, let's get right into it and talk about AI. AI is sort of...it feels like there isn't a standard agreed upon definition. What should we mean when we talk about AI in underwriting?

Pankaj: So, decades ago when I was studying AI and I had introductory courses, the first thing that you were taught when you studied Artificial Intelligence were expert systems. Very simply speaking, these are nothing but if and (inaudible) which is you codify your knowledge and say, if somebody has utilization more than this, you know, you give them credit. If they don't have...if their utilization is lower, you know, you give them this amount of credit and so forth, right, so you can codify your existing knowledge. That, itself, was the beginning of AI and all of these things began in agriculture and oil, actually, you know, in oil explorations a lot of this technology is being used.

But, you know, if you go back to the example, I can just, you know, just relate it to the same example that I gave you about my decline. So, look at that, my utilization will end up being high at a point of time, but not consistently high, but you could argue that if the utilization is high, you are a likely higher risk customer because you are seeking credit so that stems for you. But, if you look at the fact that I have actually only just one credit card, what does that tell you? That should tell you that oh, you just have one credit card and hence once in a while you'll end up using all the limit that you have. That's not such a bad thing, but actually the conventional credit models that you have, they will all penalize you for not having multiple credit lines right now, right.

And then, thirdly, if you look at my account you'll find that I have never been delinquent, never been late in all of my credit history really, that should make me a preferred guy. Another factor that you look

at and if you find that I have never inquired for credit till last month, there are no inquiries on my profile and, suddenly, there is an inquiry on my credit, what should it tell you? It can tell you that here is guy who has been a very loyal customer with their existing bank, they use their credit in a very reasonable way, sometimes quite a bit, but really on an average pretty recently and you can lure them away if you actually give them a credit offer at this point in time.

Now, if you wanted to make that deduction, you will need to take all of this data and derive insights from that data which are normally near, which require you to use a lot more data, which requires you to understand trends of different types of information that has been captured on you and that is what the current system does not do very well. So, my notion of AI, fundamentally, is how do you use data that is available now and now there is more and more data available, how do you use that data more and more productively so that you can meet the customer needs and, you know, build a profitable portfolio.

Peter: Right, right, okay So, why don't we talk about Scienaptic just for a little bit and your solutions. What exactly are you guys providing?

Pankaj: Yeah. So, we do primarily two things, Peter. One. a lot of these smaller lenders, they don't have the capability or even the resources to be able to build out a custom model so our engine, basically, enables them to get a sharper score card from day one. And then once we are live in their system and we are part of their process then the score card keeps improving as more and more applications pass through the system and it keeps on getting sharper.

Think about it as a set of knives that we are actually providing in a big kitchen where there are a lot of different things that are being cut. There is meat being cut, there are vegetables of different kinds being cut, so on and so forth. You have different knives for each of those things and then those knives are made from a special material that as you cut stuff, it basically senses the density and the texture and all of that and continues to actually become sharper. That's the beauty of what is going on in our software.

Peter: Right, right okay. So, what about the different lending verticals, how are you deploying these? Is it across multiple verticals?

Pankaj: Yeah. So, there are broadly two areas, Peter. We do a lot of work in consumer lending that could be, you know, credit unions doing unsecured loans, doing auto loans and so forth. We work with several auto lenders because, you know, the space.....as you can imagine, economies are recovering, a lot of people are trying to get an automobile as a means to their livelihood really so we've seen a lot of interest in that space. We work with several smaller banks, regional banks, and so forth. And then, on the other side, we also are trying to work with several SME lenders and as you can see the government stimulus.....you know, that sector is really likely to grow very significantly and we are trying to make sure that their tool kit goes to the next level so that whatever growth they experience is sustainable growth.

Peter: Right, right. So, I want to talk about the smaller banks and credit unions you just mentioned because I know a lot of them have limited capabilities when it comes to technology and even

underwriting for that matter. They don't have the capacity like the larger lenders. So, how are you helping those groups specifically? They are able to really get, you know, the capabilities that they couldn't get otherwise.

Pankaj: Right. And it's a journey, Peter, that gets us to take them on. So, the way it ends up working is that clearly all of them, really across the board, all of these guys, we have talked to hundreds of them in the last few months, pretty much everyone is looking for growth opportunities. Nobody is talking about having a loss issue which we used to hear about a couple of years ago. Right now, everybody is just talking about how can I lend more, but make sure that I do it in a reasonable manner. So, that's a very sensible way, these credit unions and smaller lenders are actually thinking about. So, what we do is we get in there and we say, we definitely have this tool kit and we feel confident that this will give you significant improvement in your approval rate, but, the way we basically encourage them to do this, understand your own risk appetite and do a little bit of testing.

So, the first thing that we'll end up doing is we end up understanding their existing loan origination system or whatever technology that they're using will sometimes at some loan origination system, sometimes it's something that they have bought from a smaller loan origination system, sometimes one of the bigger ones. So, we basically go in with them and say, okay, we'll just set our system on top of your existing system, nothing in your existing order needs to be disrupted. Just put 10% applications through our system and get a challenger decision and then you can decide whether you want to hold it up, about 30%, 40% of the portfolio and so forth. So, that's Step One in our engagements, typically.

Another thing that happens, Peter, is that in lots of these cases we find that credit unions and so forth even now have a judgmental component and I think it's a good thing because there is a human being that is looking at all the quantitative information that is being provided by these folks and so forth. But, they also have the ability to ask the question to understand the situation of the consumer and that's what credit unions actually do particularly well. They can have a lot more empathy to the, you know, so that brings in additional data.

So, what we are also able to do is we are able to say, right now, you're basically putting all the applications through the judgmental underwriting process which actually makes the process not very effective. What you can do is you can target that and in cases where the approval or decline decision is very clear really don't send to the judgmental underwriting team, but then send those cases where you actually need more information and get a judgmental underwriter to make an ultimate decision there. So, that becomes the second step.

We give them a lot of operational efficiency by doing this. The detrimental underwriting gets very focused in driving truth for them. So, that's roughly the plan we get them on. Over a period of time, we think that, you know, as they get comfortable with our algorithms and they get confident that this is not blowing up anything in their credit risk performance, I think we go in with the right...I can't even predict right now, I guess.

Peter: Right. So then, if you want to get started, how long from the time that you first have an engagement with a smaller lender, how long before you can really start a pilot program, so to speak?

Pankaj: So, in most cases, it ends up being somewhere between four to eight weeks, Peter, and that timeline we are trying to shrink continuously right now because we are building these partnerships with loan origination systems so that the integration is almost fully done. We already have partnerships with all the data providers so that we can bring all the data together very quickly, that doesn't take time.

But, on the integration for the loan origination system, we still have some work that we have to do, but really, four to six weeks, typically. In some cases, we have been able to get people up and running even in two weeks time and that happens with the smaller startups who have their own homegrown kind of, you know, loan origination system. So then, we have a tech guy who we can just sit across the table work on our APIs and the integration gets done within a couple of days time and we can get them live in a couple of weeks time.

Peter: Okay, interesting, interesting. So, let's just dig into the data. Now, you mentioned a little bit about this earlier, but I wanted to talk about the breadth of data, the types of data that you put into these underwriting models. Please explain that a little bit.

Pankaj: Sure, sure. So, on the three bureaus, it's par for the course, obviously, the space, right. Everybody uses some sort of bureau information so, obviously, we use all of that data. The difference when we use bureau data, Peter, is this, that most people will use an external score like a FICO score or a VantageScore, something like that, and you know, ten or so attributes, for example. Our models will, you know, gather maybe like a 100/200 variables, depending on the model that we are using so there's just a lot more richer information even if it is coming from the same bureau, basically, the lender was using earlier. So, that's one thing that happens with just the bureaus, we use a lot more information from the same bureaus and then, we build in this ultimate data sources.

One of our longest standing partnership has been with LexisNexis. LexisNexis, typically, was used more for identity and fraud verification kind of services. We have been able to find ways to use that data very productively for credit as well and, you know, it doesn't work for all segments, but in some segments, whether it's a thin file and so forth, that data becomes very, very helpful in helping lenders approve more people. So, that's another example.

We have several other partnerships that we have built out, we have partnerships with MicroBilt which, again, has a slightly different coverage and some alternate data and so forth. We announced a partnership last week with a company called Urjanet, it's a utility data provider. They basically get database with the permission of the customer and, again, we use some of that in the decision making process as well. One very interesting area or maybe two, one is open banking really, right.

So, companies like Plaid and several others who basically have access to the banking information, that information can be very powerful. So, we really encourage people to use that information better what we can. And the last one, I would say, is you're hearing a lot about Embedded Finance, Peter, right, where it's a retailing business, but they are trying to put lending in the middle of it really, offer

Lending-as-a-Service while customers are actually making a purchase. So, in that environment very rich information becomes available about what actually is being bought, what is the underlying transaction that is going on and we have found that to be very, very helpful and very powerful predictor of risk.

Peter: Right. And then, how are the models improving? I presume you talk about all of the....you bring in all of the transactions, you've got multiple clients so does your core model learn from like all the different transactions, I mean, how is it improving?

Pankaj: Yeah. So, what we do not do is we do not bring in all of the data at a customer level across from different clients, that's not our business model because we think of ourselves as a software provider, not as a provider of this consolidated data and getting insight from that. Actually, banks and financial institutions are very skeptical about actually sharing data across each of their dealings so that's not very easy to do.

But, what we do is we have this concept of building these models that has a layer of mental intelligence that keeps on getting refined. It's almost....like think of it as a first layer of a neural network, if you will, where basically all of the customer level information gets aggregated and then that information basically helps us get sharper ways for different attributes, depending on the segment mix that people are getting. So, that's the kind of methodology that we have built out which keeps the data of a particular client separate from each other, but there is some benefit that you get because of the overall learning that is happening in the system.

Peter: Right, right, okay. So, I want to talk about borrower experience because, you know, this is something that obviously everyone is really trying to improve. There's people now talking about automated underwriting, but how does AI-based underwriting impact or how can it impact the borrower experience?

Pankaj: It's fantastic news for borrowers, I think. Two things will happen, in my opinion. One, there'll be more credit that will become available as a result of this because one very persistent phenomenon that I have seen in my career as a financial services professional, Peter, is this, if you don't have confidence in the tools that you have, risk managers will force you to make sure that you don't exhaust the growth opportunity, right because you are scared of taking the risk because you are not confident about the sharpness of the tools. If the front end of the business does not listen to the risk managers then you will have disastrous stories of lending, right, a lot of models get lost and so forth. So, I think the world keeps vacillating between those two worlds, giving more power to risk managers and then taking it away and so forth really.

What we are trying to do is we are trying to say that really just continue to sharpen your tool kit a lot more regularly and that'll make sure that you have the confidence to lend, enhance your longer term profitability will not be impacted long term. So really, I think when that confidence happens, the improved confidence that lenders might have, that they exhibit, will actually go down and more credit will become available. The more easier one there is even now is we come across several pretty much, lots of these smaller clients that we're working with, even now would take several hours to approve a

loan that our technology would approve within seconds, basically. So really.....and COVID has actually really forced the hand of everybody because customers are now demanding that you give them a digital experience really, right, so our technology really enables the digital transformation. One of the best outcomes there is that the decisions will happen a lot faster for the customer.

Peter: Right, right. So then with COVID, I mean, obviously we all know what happened in the last year. Did you find that there was more interest suddenly in what you guys were doing because that was the first time, therefore, we need to, you know, re-examine our lending programs. What was the impact of COVID on your business?

Pankaj: Yeah. I think in the beginning, obviously, first few months were a total work strike because everybody was locked in, but really what happened was we basically used the time productively, I would say, Peter, if I may say so myself. We basically started doing these webinars, you know, really just sending out education, basically. So, we talked about borrower stability and debt and I don't know if you notice, the previous year, 2019, Peter, we were at LendIt and Money20/20, we were the only people who were actually talking about recession-proof lending.

I feel bad that our words will end up being true so quickly, but really that was the theme that we were trying to tell people. You know, get ready for more difficult time, slower growth and so forth, get your credit risk tool kit ready and that's what we were talking even before COVID. So, that whole team helped us, but, essentially, many people started coming back after COVID.

The first thing people were talking about was oh, our volumes are down like 70% or 50% and so forth, how do we get this back so that was one thing, right. The growth had totally gone out, there was need to actually put more credit out in the market, people actually had the capital to invest and they were not first time able to actually, they were just really not sure whether they should start lending. So, that was one thing and then the whole expectation on digitally engaging with the customers.

These two things made, I think, a lot of credit unions and lenders look at what can now be done, how can they get at once. One of the things that has happened is the provided ecosystem, Peter, has put fear in the minds of these people, if I may say so and we benefit from some of this hype, but I think people are almost scared when you talk about AI and technology. Some of these smaller lenders, they feel scared, they don't know or they can't afford, stuff like that. So, we figured out the right price points, we figured out the right engagement model and that is what we think we are seeing a lot of traction in the last eight/nine months.

Peter: Right, right. I want to mention, you know, Dave Girouard, who I'm sure you know, the CEO of Upstart, they've obviously done a phenomenal job in this area and they have become public and doing really, really well, he said in their first earnings call as a public company, I don't remember the exact quote, but it was something like, you know, all of underwriting will be AI-driven in the near future. I presume you agree with that statement, but I want to ask what's it going to take to get there, I mean, how are we going to get to 100% AI-driven underwriting?

Pankaj: Yeah. So, I have been fortunate to work under Dave McClear? in the early part of my career and he had this concept more than 20 years ago. He basically said, I have this perpetual moneymaking machine concept which is nothing but a fun job, what is now called AI, but fun job propensity models. So, you have models of response, models for activation, models for spend, models for revolving behavior, models for, you know, probability default and support, you put all of them in a box, put a prospect-full at the start of this box, put all of those prospects through that and out comes profit, basically. All that operations, live operations, are outsourced to partners and so forth. So, that was the model that was built and really what happened was this, a couple billion dollars a book was created in like 18 months or so and a bunch of people went on cruises and awards and stuff like that really. After two years of that we started seeing the losses, eventually we lost about 40% of that book in losses, basically.

So, here's the summary of my....I think our video, Dave and I, I think that I agree with him as a fellow professional who's interested, actually finding ways to use AI in a productive and sustainable manner. I actually will support that one of you....especially if you take a broad view of what we mean by AI, right. If you take the broad meaning, which I was describing earlier when you asked me the question about what is AI, if you think about AI I think I want to use data, I want to make sure that I feedback loops and I improve and embed protection at every stage of the customer's journey.

By adding vision for what AI should be doing and I think that's the right vision, I think we're living the dream to be cautious about it. I think AI is almost like a force of evolution, I think it's irreversible and the resistance will be useless, if you will. (Peter laughs) But, I think I will still say, as far as lending is concerned, we still need to overlay lending with a risk management expertise, some of which comes with experience from the past because not all the data, not all the cycles have been lived through.

Peter: Right.

Pankaj: In fact, we are changing in ways that actually nobody has gotten experience for so you have to apply a layer of experience, you have to do a significant amount of testing because, otherwise, you can become irrationally exuberant and create a volume of lending and then I'm afraid of having very dark stories which will come in the way of even the tenable length of option of AI. That's the only fear that I have, but on that, I'm sure there is power beneath the wings of AI.

Peter: Right, right. And then, one of the good things that we've had in the last twelve months, shall we say, is now, I imagine, everyone's got their pandemic models, right, because, obviously, the next pandemic might not be exactly the same, but no one really had a pandemic model that was accurate before this time period. So, maybe I presume you're incorporating a lot of that into the models now.

Pankaj: We are, absolutely. So, we were fortunate to get some experience with the 2008 situation and I think there is an art to this whole thing. I think models can only do so much. You know, we were taught again when we were sorting all of these stuff, credit stuff, people said all models are wrong, but they can be very skillful if you use them carefully to do certain things with. So, that's where we have a lot of experience that we actually overlaid from the 2008 timeframe and we said, here is what we saw, where the shifts have happened in the performance of different types of cohorts from a

retrospective.....and here is what we've tried, in terms of testing, how people will respond then and evolve the new knowledge basically from hereon.

Peter: Right, right, okay. Before we get to audience questions, maybe you can just give us a quick peak on what's on tap for Scienaptic, what's coming down the pipe for you guys.

Pankaj: Peter, I think we are just getting started on our mission. This year will be very powerful for us to make sure that our tool kit basically becomes part of a large number of lenders and start improving the quality of decisions that they are making. Hopefully, we'll go to the next level to a bunch of these people and graduate them on the whole AI spectrum, you know, in terms of making their decision making quality a lot more sophisticated. I think the big thing that I would like to do, and I'm not sure yet whether I'll be able to it this year or 18 months or only four months, but the more exciting thing that I need to get on from now is think about new products.

This whole model thing, I have a credit card or I have loan and I'll apply and I'll get rejected for it and then I'll apply for another product and see what I can get, that old model is not the right model, it's not customer friendly and if you think it's a bit (inaudible) if you apply for one card and you get rejected, you are clearing more inquiries and those inquiries are actually telling your score that you are a more risky customer, basically. So, in fact, as you apply for more credit and you get rejected, the likelihood that you will get even more rejected for other products actually increases which is a problem, right. It is a very structural problem so we think that now the time has come for the financial services businesses to build the right product to the customer, depending on the right situation, so that they can engage the customer at the right time and grow the customer, you know, over time in line how their life cycle actually evolves.

Peter: Right, right. Well, that's a big topic for another time. Pankaj, it was really fascinating having you on the show. We've got our audience Q&A, if you're listening to this through your podcast app, we're going to end this session right now, but you will be able to view the video, listen to the audience questions at the show notes that we will have link on lendacademy.com. So with that, thank you very much Pankaj, and we'll go to our audience questions now. Okay, thanks again.

Pankaj: Thank you.

Peter: See you.

I hope you enjoyed that special live podcast with Scienaptic. I just want to go back and exercise this last piece that Pankaj said. I think he said it quite eloquently saying that the model is broken where you have to go and apply and an inquiry gets on your report and it's really not a very efficient model and we sort of have been talking about this. I know that Ken Lin from Credit Karma talked about it on the show a couple of years ago, this sort of Autonomous Finance where you can have loan offers appear right when you need them and you know that you will be approved for them.

I feel like we're just getting going on that, we're not quite there, but I can see the, you know, Pankaj's vision is going to come true. I really think in the next, possibly two years or certainly the next three to

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five years, we won't have to go out and search for credit and get all these inquiries on our credit report. We're going to be able to have a system there where in some ways the loan offers come to us.

Anyway on that note, I will sign off. I very much appreciate you listening and I'll catch you next time. Bye.

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