EPISODE 67

[INTRODUCTION]

[0:00:10.8] SC: Hello and welcome to another episode of TWiML Talk, the podcast where I interview interesting people doing interesting things in machine learning and artificial intelligence. I'm your host, Sam Charrington.

Once again, let's start the show by sending some love out to you the listeners for your continued support over the last few weeks and months. This community continues to amaze us, continues to grow and to engage with us, which we love to see. We've said it before, but please don't hesitate to reach out to us with any questions comments, guest or topic requests, or just a friendly hello via any of our various channels.

You can reach us on our Facebook page, or twitter @twimlai. You can reach me directly @samcharrington on twitter, or you can email us at team@twimlai.com. Speaking of community please take note, the next TWiML online meetup is coming up soon on Tuesday, November 14th at 3 PM Pacific time, we'll be joined by Kevin T, who will be presenting his paper, Active Preference Learning for Personalized Portfolio Construction. I

If you've already registered for the meetup, you should've received an invitation with all the details. If you still need to sign up, just head on over to twimlai.com/meetup to do so. We hope to see you there.

Now as you may know, a few weeks ago we spent some time in New York City hosted by our friends at NYU Future Labs. About six months ago, we cover their inaugural AI Summit, an event they hosted to showcase the startups and the first batch of their AI NexusLab accelerator program, as well as the impressive AI talent in the New York City ecosystem. This time we had the pleasure of interviewing the four startups from the second AI NexusLab batch; Mt. Cleverest, Bite.ai, SecondMind and Bowtie Labs.

We also interviewed some of the great speakers from the event and we're presenting a couple of those interviews to you this week. If you missed any of the shows in the series, visit twimlai.com/ainexuslab2 to caught up.

My guest this time is Dennis Mortensen, Founder and CEO of x.ai; a company whose AI-based personal assistant Amy helpls users with scheduling meetings. I caught up with Dennis backstage at the future labs event a few weeks ago right before he went on stage to talk about investing in AI from the startup point of view.

Dennis shares some great insight into building an AI first company, not to mention his vision for the future of scheduling, something no one actually enjoys doing, and his thoughts on the future of human AI interaction. This was a really fun interview which I'm sure you'll enjoy.

A quick warning though, this might not be the show to listen to in the car with the kiddos as this episode does contain a few expletives.

Now on to the show.

[INTERVIEW]

[0:03:18.2] SC: All right everyone. I'm here at the NYU Skirball Center where the Future Labs group is having their AI summit, and I've got the pleasure of being backstage with Dennis Mortensen, the founder and CEO of x.ai. Dennis, welcome to the podcast.

[0:03:31.9] DM: Thanks much for having me.

[0:03:32.7] SC: It's great to have you on the show. Why do we get started by having you tell us a little bit about your background and what the company is up to?

[0:03:40.9] DM: Background. That's before our version, right?

[0:03:44.5] SC: Exactly. Exactly. How did you find your way into AI?

[0:03:50.0] DM: Sadly because we're getting older, been added for about 23 years. This is our fifth venture and they've all had really a backdrop in data, and I think we've been able to massage data from the mid-90s all the way up to this point, for where I really want to massage data in the year 2017. AI is probably the right moniker to apply to that.

In our prior venture, we did predictive analytics for media, trying to predict which stories to carry where, say on the homepage of CNN and for how long. When you kill it, what other story do we

put in its place? Before that, we did a enterprise web analytics company. Go to four seasons, how do you make sure they sell us many rooms as possible and you try to analyze that data. Suddenly, just a lifetime around data. We're very fond of that.

[0:04:42.5] SC: You're saying we, so this is a team of people that have stuck together across these five companies or so?

[0:04:46.5] DM: we've suddenly carried over team members from one venture to the next. There's suddenly some comfort in knowing that when I'm up here with you, the house is not at fire at home. You go as, "Hey, I've talked to these guys for the last 10 years at least."

For this particular venture x.ai, it's not so much that we're an AI company. I think we are, but it's more that we've latched onto this I think very obvious pain of setting up meetings. It's not that we invented that pain. I think both you and I figured out exactly two hours how to call it that if you go to work, you set up meetings. When you set up meetings, you're not going to get a personal assistant. It's you. You, you're going to fucking hate it. Then you do it for 20 years straight.

That just doesn't ring true to me. As in, "Do I do that task for the next 20 years?" I think that was perhaps the catalyst to say, "Hey, there might be this opening for where some intelligent agent can come along and just remove this one particular chore."

We then spent the last four years trying to engineer that intelligent agent, aiming at x.ai. So that when you e-mail me saying, "Hey, Dennis. I'm downtown. You got time to meetup for a diet Coke?" I can reply back and say, "Yeah. I'm up for that." I have CC'd in Amy, and she can help put something on my calendar. It is not her job to remove me from the conversation, reach out to you, have this very human-like negotiation really, drive it towards a conclusion and upon conclusion send us an invite.

It's not that you haven't seen it before. You can buy it today if you want to. It just cost you $60,000 a year and is called Tom, who comes to the office on Monday. But if you want to pay $17 instead, you should hire Amy.

[0:06:33.6] SC: Yeah. Nice. Nice. You've been at it for four years. Can people sign up for it publicly? For a while, it was invite only or something along those lines, right?

[0:06:41.9] DM: Very much so. We spent perhaps short of the first three years doing core R&D. This is one of those products where if there is no pre-existing data set, you can have that chicken and egg challenge for where I need to probably go out there to collect some data, but I can't have it brought it out there because I don't have any data.

We had this suddenly very early, early, early beta that we ran with for years that became more and more robust. The whole thing was based on a free waitlist. We were so fortunate that people immediately recognized the pain and signed up for it. It's a very long waitlist and that's always nice.

But early this year, we commercialized that R&D and put it to market, and now open in market for short of three quarters. Just about to tune our product tiers and placing just ever so slightly. But suddenly, off to the races. Try to pay back our investors.

[0:07:40.6] SC: Nice. Very nice. One of the dirty secrets, if you will of AI is that at least people outside of the industry think it's just the computers doing the work. I'm imagining there is a significant human in the loop component to what you're doing. Can you tell me how much of a role that plays?

[0:07:57.8] DM: Sure. I think there's a difference between what you're trying to achieve. There's nothing wrong with a human in the loop. There's nothing anything wrong with the human in loop forever. That's called automation or augmenting the humans so they can do a job slightly faster, slightly more accurate and so and so forth. But I think you need to decide what you want to be. Do I want to be a – if you're in the self-driving car space, a BMW with slightly better lane control, or do I want to be way more with a fully autonomous vehicle in place, perhaps in a decade from now?

I don't think if we work on both at the same time though, because they're somewhat in conflict. We sit out to create the fully autonomous agent from day one, or die trying. My investors fucking hate it when I say that online. I say there is no plan B here.

I think the difference is between one of you having a fallback for where there's something here which you didn't understand or didn't predict at a level of accuracy, for where you're willing to

move forward in a fully autonomous way. You now send it back to a human. We need to resolve that.

Or you have not a fallback, but a willingness to make errors. Simply just label a data and then upon those errors figure out, "How can I make the prediction slightly more accurate tomorrow?" We're not a self-driving car. That means, self-driving cars probably don't have much room for errors, plus some versions of an error which is that you stop or go to the side or anything that rhymes with that.

[0:09:34.0] SC: All you're going to do is mess up my lunch tomorrow.

[0:09:36.1] DM: Yeah, exactly. It might even turn you as a customer and I would hate for that happen, but I'm allowed to make mistakes here. We've always hunted the idea of the fully autonomous agent. That means of that 150 people we have in place for the team right now, about a 100 to answer your questions. I'm not trying to avoid it. About a 100 of that 150 does nothing but label data. I think there's a distinction here between –

[0:10:04.1] SC: But they're not labeling exceptions in the loop of the customer query. It's something happens later and Amy does what she can to figure out.

[0:10:12.2] DM: It's certainly happening in real time as well, and it's happening as double annotation, and it's happening with golden data sets where they label things that aren't even part of a real customer query, but all of this for purpose of being able to come out tomorrow with a slightly more accurate set of predictions.

That's been going from zero data to millions of e-mails annotated over the last three years. That becomes that corpus for where we can wake up one day and essentially have this all-margin type of software, which we can then be market with.

[0:10:52.3] SC: I mean, if you do have two-thirds of your team doing annotation and some of that is real-time, just like at a company that might describe that as human in the loop, what are the key distinctions between building a company with the idea that you're going to do that and building a company that does that, but abhors every minute of it?

[0:11:14.3] DM: I think certainly, the difference is that if you have this split setting where you have a human in the loop, the human then many times is tasked to make a perfect outcome. Whatever the implication might be on your data set, just make the perfect outcome. As in right now, just swing the car to the left. I don't really care what that means to a data set, just swing the car to the left.

When we label data, there will be a set of intents, there will be some entities that we try to extract. But even as they see those identities either not being there, are being labeled so that the outcome is wrong, they still move forward. As seen, now outdrive that car into a wall. I'm putting this in air post and nobody can see this, but their job is not to swing the car to the left. That is to drive it into the wall and say, "I labeled it as we've agreed."

The machine we still took decision, which was not optimal. But the only way we can learn from that is by label it per the guidelines. That's the difference between going all McKenzie style on automating a workforce to do a job much faster, and that of trying to train or create a composite data for where you can have this autonomous agent operate.

[0:12:29.7] SC: I'm hearing that as there's a difference between labeling and having a CSR jump in, fix the situation and get it right. Labeling is kind of - you're positioning it as the longer term approach, but certainly is one that contributes more towards generating a bigger, better data set. Whereas, having the CSR jump in and provide the right answer when the AI gets stuck, might not necessarily contribute to the long-term solution.

[0:13:00.3] DM: Couldn't agree more. It's not that there's anything wrong with that. As in you can create a formidable business on humans in the loop. That exist everywhere in the world. Call a taxi and there's a human in that car, right? That exists today all over the place.

My point from very early on was just that I think you have to make up your mind, whether you want to be one or the other the day you start, because they are in conflict. It's very easy to fall in love with the perfect outcome, because it hurts less on the way there.

I've certainly had e-mails in my inbox that have disappointment included into them. That's the most polite way I can put it. For when Amy made a mistake she shouldn't have made. The funny thing about machine mistakes and you know this obviously, is that machine mistakes don't look

like human mistakes. If you e-mail me and you and I have a dialogue back and forth and there's a little bit of ambiguity in the way you put it, you can empathize with my decision as in, "I see where Dennis came from on that decision." Machines make different type of mistakes for where it is much harder to empathize. As in that is just so –

[0:14:04.1] SC: What the hell?

[0:14:04.3] DM: - obvious. I said, "Why didn't you get that?" Because there's a difference between the machine and you trying to resolve what's being said here. That means little things for where tonight at 1 AM, you send me an e-mail saying, "Hey, Dennis. I got something super important. Would you meet up tomorrow and talk it through?"

The machine might just really do that tomorrow. But that's not what you're trying to do. You want it today. You're just so excited that you stayed up late and then you want to meet Dennis in eight hours from now, right? That seems like a silly machine mistake. I said, "You saw the importance. Couldn't you feel the importance in that e-mail? I wanted to meet with you in eight hours." That is the inner thing, dilemma in the wind. But we've been taking those punches through the face for three years and we stick into it.

[0:14:52.8] SC: I'm imagining your response to this, but based on the previous conversation around human in the loop, but for that particular type of error and those like it, is the answer labeling more data, or is the answer developing some kind of frontend set of heuristics that can help guide the AI down the right path?

[0:15:14.8] DM: That's a really good question. I think people see this as a single problem, but it's probably a setup problem. I think if you were to simplify it perhaps, there is the initial national language understanding challenge, which is not a solved science, and the only hope we have is that we pick a space so narrow that we might be able to understand everything we've talked about when we talk about meetings.

Even as you solve that, that is certainly a place where many times what we just need is more data. As in there's things in our little universe here that happens so rare that the data set is still so sparse. Give you an example; a new meeting intent, for the very definition that a meeting is

about to happen and that happens in every single meeting that we set up. That means we have a ton of new meeting intent data.

As in you can say pretty much what you want, hate in this, let's do the hokey pokey early next week. We understand that being you wanting to setup a new meeting. But you trying to change the pin code to the conference happens one out of 10,000 meetings. Do a 100,000 meetings and I have 10 data points.

As in that is so sparse. It's not about any type of model, which I might put in place as in there's just not enough data really to take any good decisions here. That is something for we can certainly see we just need to keep turning through more meetings. We can see that the level of accuracy continues to increase. That's the one challenge.

Then if you do understand what's being said, as in that NOU engine you put in place is robust and backed by a very large data set, you need to have some reasoning engine in place for where you e-mail Amy at x.ai and say, "Hey, I'm going to be running five minutes late." If I understand it, that doesn't mean I know what to do with it. Do I do nothing? Do I do something? If I do something, what is that something? What does that look like?

That is where, as you allude to, there's a lot of designs where I can help take you down a dialogue path, which is more likely to end up in a successful outcome, versus another dialogue path for where it is less likely to end up in a successful outcome.

We can certainly, and this sounds devious and there's not that if we help direct people down one avenue, we're both going to end up slightly happy or certainly more likely ending up slightly happier. Then in the end, if you take some action in your reasoning engine, that is some sort of a computational outcome, then you need some – an LG engine that can take that conversational outcome and turn it into language, so we can communicate clearly to all the constituents. That is also a place where we found that.

We thought it was clear what we just communicated, but given that the conversational UIs, somewhat of a new UI – perhaps not a UI who started on the command line, but certainly to many people in the middle of where they grew up in the graphical user interface, they don't have

some inner connection to the conversation of UI. That have been just a long optimization path, trying to figure out exactly how to put it.

[0:18:28.3] SC: You described that last step as NLG. To what extent is it real NLG versus picking from a list of predefined things?

[0:18:37.5] DM: We don't think there is a decision tree of sorts for where if I just do every single brand and have enough templates in place, I can find that template that matches that particular setting that I ended up on.

We've tried to create – I'm certainly not saying that we solved it, but the only way that we can be so ambitious is again we picked a single vertical, meaning that you can talk all you want about Chelsey Football Club winning the premiumship next year, we don't have any idea. But if you talk about meetings, we can generate pretty fluid responses that are created on the fly.

The reason that we need that is that even though meeting sounds almost simple, they're just not because you talk about multiple times and multiple ways, or multiple participants, some many choice, some optional, some assistance.

[0:19:30.9] SC: Sure. Not to get it, even get in to all the rescheduling and the moving locations and –

[0:19:34.9] DM: All of that. You don't follow the path that we sit forth. That means, sometimes we need to talk about fewer things, sometimes I need to talk about multiple things at the same time. We assemble those on the fly, and I've been forced to build this design setting.

If you want some visual output, you and me would go install Photoshop and for other tools and we'll end up with some palette of little sprites that we can use for that output. Where do design conversational UIs, as in not in word, but where.

[0:20:12.3] SC: Right now you're building your own to do it, right?

[0:20:13.7] DM: You're building an old thing. The same as it goes for the front of it here on the labeling and where do you label your data? Hopefully not in Excel. You're going to label it somewhere else, so you build your own labeling piece of software. Those NLG scripts and

scripting that we've invented was some sort of amalgamation of raw text and JavaScripts and our own little version of java script is how we're going to generate these responses.

[0:20:41.6] SC: Interesting.

[0:20:42.4] DM: But even they can given that they are programmatic, end up sometimes not sound obvious. As in, why does he say that? As in, that's not even a proper sense. I know. I'm also sorry, but it's because we're trying to generate it on the files. Whereas you don't know what it looks like until she starts talking.

[0:21:01.4] SC: I know you're English-only currently, or multiple languages?

[0:21:03.4] DM: English only.

[0:21:04.6] SC: Okay. Okay. You sign sitting back in the chair, like that is a big problem it sounds like.

[0:21:13.3] DM: We have really three dimensions for what we're going to go expand. The reason I do the slight size, or if – because it was so visual, is that whenever we're raised in the $2 in capital, we immediately get the, "Hey, when are you going to do more languages?" We could talk about the challenge in that?

Two, when are you going to do more communication channels? We can talk about the challenge, and that we will most certainly do both of them. We want the agent to be multi-lingual. Not just so we can attack other markets, but so that we can better serve the guests.

We set up meetings at about a 190 countries today. But we really only have customers in English-speaking nations. But they meet up with people all over the world. For me, up with somebody in Germany, I could actually remove some of the ambiguity for spoken in his own language. We most certainly will do that. Then the last one is that we want to make those obvious integrations into things that revolve around the event itself.

Say whenever you meet up with somebody midtown, you use Uber. You set up the meeting. Two, she know where it's at. Three, she know where your office is at. Why do I have to click for the Uber? You can just make it happen?

[0:22:30.3] SC: Or even better, why do I have to spend the hour in Yelp trying to figure out where we're going to meet?

[0:22:35.0] DM: Those little things where, "Hey, you know I eat in Hara Sushi when I meet up with people. Just book the table. It's not rocket science." Those are certainly in three dimensions. But today, it's all e-mail, all English, very few integrations.

[0:22:50.6] SC: You mentioned some of the challenges on the language side. Is it all like doing it all over again? Certainly, there are some economies of scale and you have to see the face that associates this question in particular.

[0:23:04.8] DM: There is not you, but certainly other people from the outside if they haven't thought about it for more than a few minutes, immediately just latch onto. It's just about translating your template.

[0:23:15.3] SC: Search and replace, right? Of course.

[0:23:17.9] DM: Yeah. I did a recent article about —

[0:23:18.8] SC: Can't you outsource that to, you know?

[0:23:20.4] DM: Yeah. Somewhere in writing. Hey, Google translate –

[0:23:23.9] SC: Just pot files.

[0:23:26.1] DM: I think there's two parts to it, that certainly the fact that we might have to train on a local data set. As in, the way you setup meetings in Northern Europe versus Southern Europe, or the Caribbean or Asia, might actually just be slightly different. It could just be that Northern Europe, we are super direct. We are slightly more casual and I'm saying that as an insult if we go to Southern Europe.

We might just have little queues in Asia that we don't have in the US. If I don't pick up on that, I might not have the intelligent agent I had hoped for in a different language. That's certainly suggest we might have to train on a local data set.

[0:24:16.3] SC: I'm imagining a country where the level of politeness, maybe Japan might be an example of this. This is so high that someone says, "Okay." That means they don't really want that time. That's just their way of not – not to offend the Japanese. We might even cut this whole segment at all.

[0:24:33.4] DM: Now I'll give you something where both you and I are involved. It's only you and I we are insulting now. I'm Danish, I assume you're American.

[0:24:41.4] SC: Yup.

[0:24:42.6] DM: Here's a thing we don't do in Northern Europe; so you and me and can set up a meeting for May 17th next year at my office, and you'll never hear from me. I will just assume you turn up at my office and it's all good. Here is what most Americans do –

[0:24:58.4] SC: Confirm?

[0:24:59.2] DM: Triple confirm. You knew it already. Three weeks prior to the meeting, "Hey, Dennis. Just checking in. I'll see you in about three weeks." The day before, "Dennis, see you tomorrow at 1:00." The first time I'll do the, "Yeah. I know. It's on my calendar." The third time, "Yeah, yeah. I fucking know. We talked about this like four times now."

The funny thing is that we've actually had to engineer for that in our solution, because as you double confirm, there's many things what you say in that that rhyme with a reschedule. We need to be very good at picking up on the fact that all you're doing here is just giving me a thumbs up. One of the designs that we've done to protect against that is that Amy have learnt this skill as well.

Whereas that she will reach out knowing that we setup the meeting a long time ago and you are American, so prior to the meeting happening to reach out and, "Hey, just give me your thumbs up. The meeting is for tomorrow 1:00. If there's no changes, I'll assume you're both all good and set." She'll have a better language than that. That is one of those interesting things where I would –

[0:26:02.2] SC: Does Amy just do that for the American and assumes that the Northern European is good?

[0:26:07.9] DM: Right now this is for everybody. We haven't had any complaint for where, "Hey, don't be so overly anal Amy." See, they're just taking it. That's that. But I can certainly imagine. That brings me to the second prat of the language challenge outside of being able to train on new data, which is what I allude to here is that there's probably isn't product design choices that you need to make for the particular market that you're in.

[0:26:32.7] SC: Example?

[0:26:32.7] DM: Take a remind a logic. I CC on Amy to setup a meeting between you and I, say for Friday. You are slightly tardy or busy, you're here today doing all sorts of things. How quick can Amy nudge you? We can generally see East Coast US, you can be reasonably aggressive. We can certainly also see that even just within the US, there is other places for where people are not as comfortable in her reasoning out as quick as she do. I'm saying, she's a little bit too bossy for them. Certainly people in New York, "Sure. Still let's do this." But there's certainly places where that is not the case.

[0:27:13.1] SC: Do you find it all that people try to give Amy the kind of advice that they might give an actual assistant? Like, "Hey, Amy. You need to tone it down a little bit," or that kind of thing? To what extent does Amy blur the lines between a virtual – virtual assistant is overloaded, but an AI and a human?

[0:27:34.8] DM: That's a very interesting question. I'm not sure you, me, or anybody really got the answer just yet. What I don't think you should do and certainly not something which we're trying to do is to play a game of daily toying tests, for where you try to fool people into believing that this is a human. I'm finding it hard to figure out what you win on each one of those tests. Sure, you can have a little bit of a haha moment and a little bit of social fun and that's that.

[0:28:03.8] SC: Will really probably just make the job harder for yourself the next time.

[0:28:07.8] DM: That is exactly what is happening. We try very hard to be upfront and honest about the fact that this is machinery, but do the job so well that you forget or don't care. Now just give you one stat here that we did early on. In 11% of all the meetings, which we do, at least one of the e-mails in that dial up will have one intent only gratitude.

As in somebody e-mailed Amy back saying, “Thank you.” Or, “I appreciate you setting this up for Friday.” “So sorry for not getting back to you earlier.” Even people like me, I bloody work there; will start out my handovers with, “Amy, would you be so kind,” and I don’t know what’s going on here. But that is interesting, and we still so early that there’s probably going to be a half decade for we fumble a little bit, until I figure out what is the right design for this new setting, for we have mixed agents; some human, some machine.

[0:29:10.6] SC: Have you ever thought about whether in that particular example, you’re doing that for Amy or for the human that’s on the other side of the e-mail?

[0:29:18.8] DM: There’s some research that suggest in any master-slave relationship, if the master is acting in a aggressively demeaning way towards the slave, it’s actually not the slave who’s losing, it’s the master. There’s plenty of original research and that for where the more rude you turn over time, the sadder things really become for you.

That’s also why we have this early suggestions, where for you should probably be kind to the Alexas and the Siris and the Cortanas of the world, especially if you have kits around the house, because you are in one way sort of asking a question, but you’re also teaching some other human being about how to behave in a world.

There’s certainly a thing missing right now for where they will not learn it otherwise if they don’t learn it from you, because there’s no real penalties built into these systems yet, which I think we need to have. Penalties for where –

[0:30:17.7] SC: Like Amy talking back?

[0:30:18.6] DM: I don’t think that’s the right design, but yes.

[0:30:22.5] SC: I don’t know who you think you’re talking to buster, but I’m not scheduling anything for you if you talk to me like that. That could get the point across.

[0:30:31.0] DM: That would get the point across. I think if you will walk in to the team of AI interaction designers, we have that would say, “Let’s assess that a little bit and see what we can do here.” My point is suddenly, one which aligns with what you said here for where, say we pick

a slightly more refined example for where you are really a super kind person, but you're late all the time. You're a little bit tardy. Still nice though.

That means, as Amy is about to suggest you and me meeting up tomorrow, if she knows that you're probably not going to be really there for the 8 AM. Like a third of the meetings you do, you reschedule. It's just who you are. Nice, but tardy. Perhaps you should really just start out by suggesting, "How about we meet up at 1?"

Worst, case they're just going to continue to work his inbox. Didn't have to get up early and bet at the office only to sit there alone, because you didn't get there. That is us taking into consideration that people are different here.

What I want is even if you – perhaps even turn into an asshole, perhaps the response speed just slows down. As in, she's super speedy. Machine speedy, right? Or perhaps, we'll put this on the cooler a little bit, or punch you in half an hour. I'm not sure what those designs look like, but I do think they eventually will have to merge in these systems.

[0:31:56.3] SC: Interesting. Interesting. Before we wrap-up. I want to go back to a comment that you made earlier about – just about the different machinery, the different tools that you've had to build on your own. I've talked to several companies in the conversational space over the past few days and everyone is building the same things.

Everyone has, you know they started off, they tried whip.ai, API.ai, the black box nature of those platforms didn't work out for them. You're saying similar things; the platform itself, plus all of the tooling that goes around labeling annotation. Is this all stuff that you think that everyone is doomed to reinvent for themselves? Or is it the nature of the problem says that folks will want to create these things over and over? Or do you think the problem will eventually lend itself to more of a platform type of an approach?

[0:32:52.8] DM: It depends on how loaded the word platform is. I certainly believe that the tooling will disappear as a task for the individual companies. That doesn't ring true to me. I've been around long enough to see how the first mover were forced to make all sorts of choices, where they would go and implement things, where had the many tool out there, I would've implemented that. But there was no tool out there.

That goes from any type of labeling, or even any NLG-type design you would have to do. I expect that type of tooling to arrive. I imagine even surprised that more people are not trying to attack the AI space from that angle. I haven't really seen anybody do anything, but just do it for themselves where we might even want to when they spin that out and say, "Hey, here is a tool for where somebody else might be able to take advantage of that."

Go back, say 30 years, pretty much any Fortune 2000 would pretty much implement their own ERP system. We did that in 2017, you'll be crazy. You would install some Oracle, PeopleSoft, whatever type ERP and hopefully be happy with that. Tooling, I agree should and will be commercialized.

Now on the generalized ability to make predictions, I think there's a difference between whether you being in high accuracy or low accuracy space. Higher accuracy meaning that your product can't exist without a very high degree of accuracy in its predictions.

A self-driving car cannot lift with the footnote that suggest for every 1,000 miles we hit a pedestrian. Even though that is a fantastic piece of software, it just can't exist in market. But certainly plenty of software for where, "Hey, I pick up 80% of the faces in all of the photos that you upload." Nice. As in, that's not too shabby. That's really just you helping me out for where I don't need to attack those phases and motion the images which I upload. That's good. For that, you should probably just go use Clarifai. That becomes I think a good platform play.

I think right now, if you cannot live with a degree of error, you probably have to forget how do I then go engineer my own high accuracy backdrop? The only way you can beat those platforms is by being super focused on some vertical way. I'm just the guy who schedule meetings, right? As in we've optimized everything for that particular use case.

It's not the way you necessarily smash at the next guy. It's just hyper-focused. Yes, I do think that will arrive. What I don't think will arrive is that you want to build something on Facebook Messenger, the tools as they provide will be all you need. Sure for some nifty, few basic things, but not for anything serious.

[0:36:11.0] SC: Okay. Great. Well, I really enjoyed this conversation. Dennis, thanks so much for joining us.

[0:36:15.9] DM: This was fun. We should do it again.

[0:36:16.8] SC: Awesome. Thank you.

[0:36:17.5] DM: Cheers.

[0:36:18.6] SC: Cheers.

[END OF INTERVIEW]

[0:36:23.5] SC: All right everyone, that's our show for today. Thanks so much for listening and for your continued feedback and support. For more information on Dennis, x.ai or any of the topics covered in this episode, head on over to twimlai.com/talk/67. We hope you've enjoyed our NYU Future Labs AI Summit Series. If you need to catch up on any of the episodes, visit twimlai.com/ainexuslab2.

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[END]