SDS PODCAST

EPISODE 986: BUILDING HARDWARE IS HARD BUT AI AGENTS HELP, WITH KISHORE SUBRAMANIAN

Jon Krohn:	00:00	In software, when something goes wrong, you push a patch. In hardware, oof, you're dealing with big headaches and huge costs. Thankfully, AI is transforming the way physical products get built for the better. Welcome to episode number 986 of the SuperDataScience Podcast. I'm your host, Jon Krohn. Today's guest is Keshur Subramanian, CTO of Propel Software, a Bay Area company that combines product data with Agentic AI to make the production of physical hardware, including high tech and MedTech devices as seamless as possible. Prior to Propel, Kishore held senior engineering roles at Google, where he worked on Google Assistant, so he has particularly rich experience with agent development. Speaking of developing agents, we've partnered with Salesforce today to explain how their Agentforce 360 platform empowers innovators to turn their ideas into scalable software businesses just like Propel's. Ready for all the exciting details? Let's go. Kishore, welcome to the SuperDataScience Podcast.
	01:01	What a treat to have you on the show. How are you doing today?
Kishore S.:	01:04	I'm doing great. Thanks for having me here, Jon.
Jon Krohn:	01:07	Nice. And I believe you're a Bay Area base, is that right?
Kishore S.:	01:10	That's right. We are in San Francisco Bay Area. I live in a city close to Cripetino.
Jon Krohn:	01:15	Nice. And I'm guessing by you having to close your windows just before us starting recording because of a siren going by, that it's a pretty nice day over there.
Kishore S.:	01:24	It's an amazing day today. Yes, that's right.
Jon Krohn:	01:26	There you go. You don't hear that enough in San Francisco. So Kashu, you're CTO at Propel Software

where you lead engineering and product development of the company's products, which are actually designed for helping people build better products as well. So you're a cloud native product lifecycle management, PLM, and quality management system, QMS. What does that mean? What is a product lifecycle management software? What is quality management system?

Kishore S.: 01:59 Great. Great question. Great way to get started. So think of any physical product. These products that we use every day, whether it's an iPhone or actually the laptop we are on currently, think of all the things that need to happen, need to be designed and put together for it to go from concept all the way to the customer, which is us in this case. And even thereafter, once we start using it, once it's been manufactured and sold, there are quality issues that need to be managed and that is just all these loops, if you will, that needs to go on even after something has been manufactured. So Propel's products, the product lifecycle management helps companies that manufacture these physical products take it from concept all the way to customer. And we are the system of record for the product information. What is going into this product?

02:57 The list of parts, the hierarchies of all the things that need to be done and all the information that's needed to manufacture. Oftentimes, the product is designed in the US, in the case of iPhone here in Cupertino, but manufactured, as you know, in various places across the globe, and then working with the supply chain and so on. So there's just a lot of information that goes on, the process that goes on. Same thing with the quality management system, in addition to building the product, obviously there's quality that needs to be built in. Are you compliant with the different processes as you go through this? And how do you handle exceptions when it comes back in terms of repairs, in terms of improvements to your product? So those are very core aspects to how you build a product, and that's kind of where we fall in.

Jon Krohn:	03:52	Fantastic. So it's funny because in my life, I've only ever built software products. So when somebody says product lifecycle management, I immediately am thinking of my own experience and SaaS products primarily. But it sounds like you mentioned a lot of hardware examples there. Is this product designed for hardware products or does it work for anything?
Kishore S.:	04:13	Yeah. So most of our customers build some kind of physical product. It doesn't have to be a high tech product, but high tech is one of the key industries we work with and also met device products. So we take a lot of these things for granted in terms of how these things get produced and manufactured. That's kind of where we are. But you mentioned software, Jon. I will actually draw a very good analogy with how software works. Even there, there is the product lifecycle management when you go from concept to actually launching a software product. And when you look at a company like Atlassian, if you think about the kind of tools and products they have right from Confluence where in terms of requirements gathering or to GitLab and then to Jira and then other products across this product lifecycle management, that's what Atlassian has done.
	05:12	We are like Atlassian for physical products.
Jon Krohn:	05:14	I see. That's a great analogy. And yeah, through our research, we saw that in addition to high tech products, MedTech products, you also do consumer good products. That seems like a big vertical for you guys as well. But high tech, MedTech, consumer goods, these are all very different kinds of products. I can't imagine that for a consumer goods product, the product lifecycle life cycle is the same relative to MedTech. How is it flexible across all of those different verticals without becoming a big Frankenstein?

Kishore S.: 05:51 Great question. Once again, you're right. The process, the kind of things that you do to manufacture each of these things is very, very different. The type of attributes, the fields that you track, that varies from company to company and vertical to vertical as well. Now, this is where the Salesforce platform comes in. So Propel is actually an ISV built on the Salesforce platform, and we can go into what that means. One of the key things that we derive as part of being on this platform is the extensibility of the platform. Now, what I mean by extensibility is the ability to define your domain in the most natural way for your particular vertical, right? Being able to track different attributes of different objects that are there, the relationships to be able to describe these things, and then extensibility at the process level. And also, so what I meant is the extensibility of the data model, the process, as well as the user experience level.

06:58 Now, this level of extensibility is needed to be able to support different verticals. On top of that, MedTech companies have the higher bar, along with all of these things, they have their higher bar because they are in a regulated industry and they go through audits as well as have to be compliant with FDA and so on. So they move at a slightly different pace compared to the rest of the industries. So we also are able to support that. So this kind of extensibility in the platform is what enables us to actually go into different verticals and support them.

Jon Krohn: 07:38 Very cool. And last Propel specific question here for you. You have a product called Propel OneAI. Is that right?

Kishore S.: 07:47 That's right. Yes.

Jon Krohn: 07:48 Yeah. And it helps you turn data into actionable intelligence for an AI podcast like us. This seems particularly interesting. What is the Propel One AI? How does that work? And can you walk us through maybe a

specific example of how that allows a client of yours to go from data to actionable insights? Awesome.

Kishore S.: 08:10 Yeah. Propel one is Propel's AI solution and platform, if you will. And it's built on top of Salesforce's Agentforce platform. So that's the foundational part. Now, Propel One brings together data, metadata, the process, the code workflows altogether as part of this intelligence gathering and data gathering, if you will. So let's take some examples. So PropelOne is able to leverage the data from Propel. We use this product called the Data 360, which is part of the Salesforce platform. So we bring in this data, almost like a data lake, if you will. So that's one place. I mean, many of our customers also use documents. They store hundreds, thousands of documents in Propel as part of their compliance process. So those are also kind of brought into Data360. Now, that's one part. So the core aspect of AI is the availability of data and then metadata, which describes your data as well.

09:23 Now, on top of that, the second aspect of this is the agentic side of things, which is the ability to do something with this data. So on one side, you have the generative side where you are able to glean useful information from documents. On the other side, you're able to do something useful that was otherwise laborious required a lot of manual.

09:49 It was tedious and it was time consuming. You're now able to do that with agents. So these are the two aspects the way we are looking at. And let me give you a concrete example. So as part of this product lifecycle, just like in software lifecycle, I'll just keep drawing that parallel. You make changes to your product. Your engineers are proposing and making some changes to your product as it's getting developed during your design and implementation phase. Now, so in software, for instance, engineers would send out a pull request to make a change to your product, and eventually that gets tested

and gets rolled out. Now, as part of our Git workflow today, as of last few months ago, we have the privilege of and the benefit of having these code review agents actually look at your pull requests and tell you what is going right and what is not.

10:43 The reason being, and code review is a huge, important part of this process because you want to make sure your quality is there as early as possible. In the same way, in the process of building a physical product, we have what is called an engineering change order, right? So equivalent of pull requests, if you will, for your audience. Now, you're proposing some changes to your bill of materials, which is the list of parts that are going into the product. Now, there might be ... How would you know if this change that you're proposing and making doesn't have an adverse impact downstream? Now, what type of risk does it present? Am I following all the compliance processes laid out by my company? If all that information is presented to me at the time, similar to code review agents providing that information early on, I can avoid a lot of pain later on, whether it's in terms of money, in terms of time and effort, terms of number of people who have to fix things later, can I shift left and kind of introduce that quality as early as possible?

11:55 This is possible with Propel one today with what we call as a change review and the quality agents that are part of the platform.

Jon Krohn: 12:04 Nice. I like that. So if these Propel OneAI agents are prepared with the right context early on, they can shift left the kinds of issues that come up further right on some timeline. And by fixing those kinds of production, quality, safety issues earlier on, I can imagine the savings would be insane, especially in physical products. In software, you can issue a patch. It's still going to be way more expensive to fix something further right along a timeline than left in software. But in hardware, oh my

goodness, when you see Toyota factory recalls of millions of cars, the cost of that is insane.

Kishore S.: 12:48 It is insane, right? And it is very complex because there's a lot involved here. In software, as you pointed out, you can patch it. There is that opportunity that barrier is low. Here, you're working with contract manufacturers, you're working with suppliers, you're working with supply chains that are being affected by geopolitical issues, as you know. So how do you know, for instance, if you're using a part that's no longer available or it's a lot more expensive because of those geopolitical reasons and other dynamic things that are happening in the world today? So how do you react to that and still make the cut for your manufacturing deadline? So introducing all that as early as possible and having that information is going to be very key.

Jon Krohn: 13:30 Love it. Now, you mentioned earlier in the episode about how you've built your agents on top of Agentforce 360. Tell us about that. Why did you decide to do that? My understanding is that you were one of the earliest innovators to take advantage of Agentforce 360.

Kishore S.: 13:47 Yeah, no, absolutely. We were very early with this, Jon. We started our journey with AI with Propel One way back in January of 2025 and even before that, for that matter. Now we started with Agentforce because it kind of provides everything that we need to focus on our domain. And AgentForce actually provides a lot of the plumbing behind the scenes. Now, whether it's in terms of data, in terms of metadata, in terms of security, governance, right? Because companies, Propel actually manages some of the very core intellectual property for our customers, which is their product information, right? What goes into their product? Now, this is very key information that they don't want. They want to be very careful where that goes, especially with AI. So in this case, having that secure

environment where they know exactly what's going on with their data is very, very important.

14:53 So that was provided by Agentforce. The other part, as I mentioned, is all the essential tools that are needed, whether it's in terms of what is called the Agent Builder that's built into Agentforce, they have what is called Agent Script with which it makes it easier for us to actually build these agents. There's Data360, which is a huge component of this because you're bringing in data, documents and other things, and then they have what is called a reasoning engine. They call it the Atlas reasoning engine. Essentially, it's like an LLM within Salesforce that is able to take a problem that we provide, a reason and break it into tasks and invoke the right aspects of it so that you have the agent take part of the AI story. So these are all aspects of the platform that would've taken us a lot more time had we built all this by ourselves and we were able to leverage that.

15:51 In fact, we had PropelOne released within six months by mid of 2025, we had our release of Propel One with some existing customers. So customers like Guardant and Breg who are kind of leveraging these things, they're very early adopters of Propel One as well.

Jon Krohn: 16:10 That makes a lot of sense to me to use Agentforce 360 to accelerate getting agents that are secure and reliable into your customer's hands because I can imagine if you were using tools like MCP or OpenClaw, if you were kind of putting those kinds of things together, open source options for creating agents, there's all kinds of known security issues with those kinds of, specifically the two that I mentioned there, MCP and OpenGlaw.

Kishore S.: 16:37 Very true. Very true. So I mean, these are fast evolving technologies. We don't rule this out in the future, but at the same time, these things have to get, they have to move out of the prototype and those stages into more

mature technologies where security and other things start to play a very important role, especially in enterprise software. So at which point we'll be ready to adopt those technologies as well.

Jon Krohn: 17:04 Nice. And so with Agentforce 360 specifically, what is it like? If our listeners are like, "I want to be able to build an enterprise ready agent," it sounds like Agentforce 360 would be a great option to do that. How do they get started? What's it like at the beginning of a partnership with them? Tell us about the journey.

Kishore S.: 17:25 Yeah. So to me, we looked at ... So initial days, I should say, Jon, was about understanding the technology, what is available and what is possible with this platform. So we actually built a lot of engineering prototypes, if you will, initially, just to understand what it's like. And Salesforce has been, what do you say, evolving very, very quickly as well. I mean, it's the fastest I've seen many of these products over the years in terms of the effort behind Agentforce has been tremendous and the support we have received as part of our early adopter of this technology. So this is great. It's been great. So as we looked into this, the tooling support within Agentforce, the fact that there is actually a chatbot built in as well, so we could actually build something and test it right there with our data and with our customer data in terms of for our customers, that was tremendous and to be able to tweak it.

18:33 And this is another aspect of it, Jon, which is that it's hard. There's a lot more going on at the point of implementation as well. I mean, you've probably heard of forward deployed engineers. There's a reason why this is getting more popular because it's hard to gauge everything upfront. There's a lot more happening, tweaking happening, fine-tuning happening at the point of implementation, because obviously each of our customers has different needs. And then being able to do that with Agentforce was another important reason.

Jon Krohn:	19:05	Nice. And then beyond Agentforce, do you have any tips for getting AI projects into production? We're still seeing lots of AI pilots never make it into a given developer's customer's hands. What advice do you have for listeners who are builders and innovators looking to get AI products out of pilot and into production, maybe particularly if this is an Agentic AI product?
Kishore S.:	19:33	So to me, look at it broadly in two buckets. One is on the generative side, the other is on the agentic side. So that's two ways in which I looked at it, broke it down at the top level. On the agentic side, look at, let's say you want to automate a particular task through AI. I would start by looking at how would a human do this, right? And how would we approach as humans to solve the same problem, breaking it down and then into tasks, and then lay out that process, and then look at which of these tasks can be automated using AI. And obviously, as part of that would be the next question, which is, do you have the right data for that? And the second question would be, are there underlying tools that you need to build to make that happen? And what I mean by tools, obviously those tools will be backed up by some code that are more building blocked type of code that needs to be built in as well.
	20:35	So understanding how these things work and then having those foundational pieces in place makes it a lot easier. And then the third part would be don't ignore security and that shouldn't be an afterthought, that should be something that's built right into your architecture and design right up front. So to me, bringing these together is what helped us understand that it made it a lot easier, just the focus on those building blocks and a few of the other things that I just mentioned. Yes.
Jon Krohn:	21:12	Great advice, particularly coming from you because we haven't talked about it in the episode, but in addition to being CTO at Propel Software, you also used to be in a

senior engineering role at Google where one of the products you were responsible for was Google Assistant. So you are certainly someone with a lot of depth of knowledge on these kinds of interactions and interfaces. One part of your, I don't know if it's your career history, but it is on your LinkedIn profile that you and I have in common is we've both done 200 hour yoga teacher training certifications.

Kishore S.: 21:44 I

Jon Krohn: 21:44 Didn't know that,

Kishore S.: 21:45 Jon. Okay.

Jon Krohn: 21:48 So we don't have much time to talk about it, but I'd love to learn how that ended up being something important to you. And you've even put it on LinkedIn, so it seems like it's something that you really value professionally. Tell us about that.

Kishore S.: 22:02 No, absolutely. No, Jon, I didn't know about that. So it's very, very good to meet somebody who's already gone through that as well. Yeah, no, I've been a yoga practitioner for many years and I've also always wanted to give back by teaching. And I was looking at different things of how I can teach something and it became clear to me that this is something that I'm really, really passionate about and I would like to share. So that's how I converted my practice into more around the teaching aspects of it, which was excellent. It was a very, very good journey to kind of go through that. So yes, that's how it started. And then I taught for almost two years. I've taken a short break now, but then I'll continue to teach in the future.

Jon Krohn: 22:48 Really cool. And just one last thing on this topic. So a lot of people don't know this, but the physical postures of yoga are only one of the eight aspects, the eight limbs of

yoga. So there's like seven eighths of yoga has nothing to do with the physical postures that people that you mentally associate in North America and probably in Europe with yoga. And so I understand that meditation, which is another aspect of yoga, that seems to be something that's very important to you as well. Do you recommend ... Give our listeners some reasons why they should consider a meditation practice and how that could make them better at building AI products.

Kishore S.: 23:33 Tied back to this. No, meditation ... Actually, yoga, as you rightly pointed out, is a lot more than the physical aspects, which is kind of how it's seen today, but it's fine. You get started there, but yoga's real purpose is actually a path of meditation. So yoga is a path of meditation. In fact, all this physical yoga is actually the purpose of that is so that you can sit still with your spine erect for a period of time. So everything else is actually done so that you can do that. I personally meditate every day, in fact, and I find that it actually, just as even though that's not the primary purpose, it unlocks the kind of creativity and the kind of a different level of thinking that you would get as part of this, as a side benefit. That's not the main reason why someone should meditate, but that's something in terms of your career and in terms of your work, you'd see the kind of energy that you have during the day, the start of the day and the end of the day.

24:41 It's pretty much the same. You feel the same at the end of the day as well. Meditation is that superpower that is absolutely needed today for various reasons.

Jon Krohn: 24:51 Yeah. I think it creates space in your thoughts. You feel less like you're caught up in the day-to-day things that you have to do and it can help you think about what do your users really need and how can you make a better product, big picture stuff.

Kishore S.: 25:05 Absolutely.

Jon Krohn:	25:06	For sure. All right. So it is time for us to start wrapping up, but as you know, before I let any of my guests go, I always ask for a book recommendation. Kishore, what do you have for us?
Kishore S.:	25:16	All right. So since you mentioned you are into yoga, I will actually mention this book. It's one of the best books on yoga if you want to understand yoga at a core level. It's called Arsana, Pranayama, Mudra and Banda. And this is a book written by this monk by name Sami Satyananda, S-A-T-Y-A N-A-N-D-A, Satya Nanda. It's one of the books that was written in the 50s and 60s, I believe, and continues to be an inspiration for me personally to know anything and everything about yoga. It's like the Bible for it. So that's the book I would like to recommend. Asana Pranayama Modrain Bandar. That's the name of the book.
Jon Krohn:	26:05	Fantastic. I found it on Amazon and I will make sure that it is in the show notes. And that particular person, Satiananda, that's a familiar name. I think he's a big dealer.
Kishore S.:	26:17	That's right. He's a founder of a very important school of yoga in India back in the 50s and 60s called the Bihar School of Yoga. And they have published many, many books from that institute and they are of the highest quality directly at the core of the teachings.
Jon Krohn:	26:37	Fantastic. I can't wait for listeners to come back and let me know how their AI career accelerated as a result of that book and of this episode. Thank you so much, Kishore. For people who want to follow your thoughts or get more information about Propel after this episode, what's the best way to follow you?
Kishore S.:	26:55	I would say on Twitter on LinkedIn is probably a better option. So Propel Software is on LinkedIn. You can find us there. I'm on LinkedIn too. Not very, very big on social

		media, however, we are still there. So please follow Propel Software and you should see me there.
Jon Krohn:	27:15	Fantastic. Thank you so much for taking the time out of your very busy schedule with us, Kishor. We really appreciate it. And hopefully we'll have you on again soon to hear how your journey's coming along.
Kishore S.:	27:24	Looking forward to it. Thank you so much for having me, Jon. It was a pleasure.
Jon Krohn:	27:31	Great episode today with Kishor Subramanian in it. He covered how product lifecycle management, or PLM for short, is the system that takes a physical product from concept all the way to the customer and beyond. He talked about how AI agents can review engineering change orders, the hardware equivalent of pull requests to flag risks, compliance gaps, and downstream impacts before they become expensive problems. In hardware, unlike software, you can't just issue a patch so shifting quality left can save millions. You also talked about how Propel built their AI platform Propel One on top of Salesforce's Agentforce 360, which gave them security, governance, data infrastructure, and a reasoning engine out of the box, allowing them to ship in about six months. I hope you enjoyed today's conversation to be sure not to miss any of our exciting upcoming episodes. Subscribe to this podcast if you haven't already, but most importantly, I hope you'll just keep on listening.
	28:27	Until next time, keep on rocking it out there and I'm looking forward to enjoying another round of the SuperDataScience Podcast with you very soon.