From Orthopedic Surgeon to AI Founder: Building Healthcare Software Transcript

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Introduction: Dr. Justin Smith

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Welcome back to the Startup Physicians podcast. This is your host Dr. Allison Kerman and I am joined today by Dr. Justin Smith, an orthopedic surgeon and AI guru who's been building his own platform and has so many interesting things to share about the journey and and the build. So Justin, thank you so much for joining us today. >> Yeah, thanks for having me.

>> I really enjoyed hearing about your background in our conversation. I'd love if you could share with people the arc of your career and and how you went from being focused on orthopedics to what you're doing today.

>> Yeah, absolutely. grew up in Atlanta, University of Georgia, genetics major. So, started out as a nerd and then trained in Michigan, orthopedic surgery, and then orthopedic sports fellowship in Steman Hawkins in Greenville, South Carolina. And it was there that met my two co-fellows, Nate Bose and Todd Walker, where I really kind of started to get that entrepreneurial bug. And Todd was really kind of the impetus of it. He out in California during his residency had already started developing some patents and products and he was very energetic guy and helped us to start the idea of building a coffee company called Morning Rounds coffee. It's similar to Black Rifle except we donate 25% of our proceeds back to healthcare workers. And so we started that from scratch all bootstrapped and really learned a lot about you know creating a business all together. It was a passion project. We've won awards with it. that we're now in University of Cincinnati and and that was a fun undertaking that was just learning about the intricacies of building a business.

Since then, I've developed medical products that I've gotten FDA approval, other small companies and then went into practice for a massive hospital system fresh out of fellowship clinically loved it, but you know, as many other physicians experience, very little autonomy and so you know, December of last year decided to leave and start my own private orthopedic practice. and in doing so realized that there's a lot of opportunity especially with the AI revolution that's coming to build an infrastructure that would help leverage that technology to reduce the overhead to run a practice and I knew that I wanted it and others would want it. So I ended up creating a company and we're we're pushing as hard as we can now. >> Congratulations.

Why AI is empowering physician founders

I think there's a lot of physicians who are feeling really empowered by the AI revolution right now that software engineering is now accessible to those of us who are traditionally more considered subject matter experts and not coders. And I think that sometimes being able to be a visionary and to identify well these are all the problems and this is potentially how I could create a product to solve it and then actually having access to being able to do that. you really can get something going. >> Absolutely. Nowadays, the technology offers you this huge opportunity. Knowledge no longer has capital anymore.

Knowledge is accessible to everybody and that's the beauty. The keys of the castle now are amongst the masses. So information about business, about medicine, about technology is more accessible than ever. It it behooves us to be able to leverage that technology to be able to do all these beautiful things. I do lecture internationally on trying to help you know individuals understand how to use this technology best practices to help them build all these great ideas that they have and then how to go about it in in the best way. >> That being said there is a difference between something you can vibe code in an afternoon as a non-technical person and what it takes to actually build production ready healthcare software. So it definitely does feel very accessible these days. But then there's also the point of if you don't have experience overseeing product development, you can go down a lot of rabbit holes. You can be unaware of different compliance requirements and it still requires technical expertise to get productionready healthcare software. I'd love to hear what your journey has been with a development team and in

finding the right resources and understanding those the scope of building something like what you're building.

>> Absolutely. The most important thing is just having humility in this process, right? You don't know what you don't know. Uh AI is good and it can tell you your blind spots and you should absolutely leverage that to help you understand what you don't know, what you should be thinking about, and when. It was actually during my three-year-old's birthday party that I was telling him about this idea and how we're going to automate clinical practice. And my neighbor is a software engineer. He's like, "I'm a machine learning scientist.

Like, do you have anybody running your software?" And I was like, "No." He's like, "I'll do it for you." And it was actually through him because I I knew nothing about software engineering, the process, and so forth. I think AI is a great tool, but you don't know when it's erroring unless you're an expert of that, right? And so, I think there always needs to be a human in the loop to vet the information that you're given. Otherwise, you just take it and hope that it's right. With Chris, he's been able to really teach me the process of developing it, right?

Healthcare security, PHI, and SOC 2 compliance

So you know from feature road maps to actually building the technology to QA testing to then putting it into testing staging production how does that whole flow work what are the different you know types of code and so forth how does the database run how is the user interface and then you know unfortunately doing a healthcare app that touches PHI it's not like a fitness app right if this was a fitness app we would have been in the market in a month but with healthcare because of that security we had to a high level of compliance and probably the most authoritative compliance is sock 2 compliance which is not only that your data is secure but how does your company run in order to maintain that that level of security.

>> Yeah. And it it's a lot. I've seen software development projects go sideways when people who don't have an overview of the feature requirements or the product roadmap or what's going to be developed when just have a lot of ideas of what needs to be included in the very earliest versions. And every single feature needs to earn its place on the product roadmap strategically. It has to be blocking something or it's unlocking something that is some sort of value. But if you spend all of your time adding a ton of features that are nice to haves and you don't actually get something into the market, you have the risk of like never actually releasing it or releasing something that that doesn't work. >> Yeah, you're absolutely right. You know, Chris was actually very helpful to mentor me in that piece. He had built different software solutions for different industries and he would always say yes I'm the subject matter expert and that helped but at the same token like what is whimsical and I would really want this for me may not pertain to others the ROI is not really there and in in doing so I understand that my viewpoint is very narrow and so what's been cool is not only from Todd and Nate's perspective but our investors are all orthopedic surgeons and different clinicians and they are all beta testing our product and so a lot of what is being built is being directed by other physicians, right? If I want it, I can assume other people want it, but I want to hear other people tell me and prioritize what gets built when and then how does that function?

Why physicians still have an edge as subject matter experts

>> Yes. And I I want to call out something you said about being like a subject matter expert. A couple months ago, I was at this retreat. It was like a hackathon with like a ton of developers and then like three doctors that came with me. It was interesting to have conversations with these developers cuz they felt like they were like our world is now accessible to anyone. They were talking to us as the physicians, but you know where the problems are and you know not just a description of the problem but like all the edge cases of it like every single aspect of it that all the features that are required being the subject matter expert on that thing. it it's still great to come together with developers, but their world is actually accessible now. And so, one of the things that I'm always trying to do is to find the right combination of skills and talents that are needed on different initiatives or ventures. And I certainly think that really great developers who can work handinhand with the subject matter expert and really guide the process and make sure that things are being done with high fidelity and and compliance is so important because I actually don't think that we as physicians I don't think that our biggest contribution is going to be in actually coding like I I tell people like code your MVP go make a prototype that's great but ultimately you are going to want to have a developer who you trust who can follow your vision and who you can hand things off to because that is their expertise and they can do it about 1 million times faster now. And you are needed to run the strategic like vision of

the business cuz the product itself is only one small sliver of what it takes to create a successful venture. >> You're absolutely right. I mean selfishly I would love to just build and code all the time but unfortunately you're absolutely right. there's a lot of other business functions that supersede that and most of my role you know I do leverage these these coding tools and most of the time it is to create the demo to be able to show hey this is how I want it to look this is how I want it to flow make it all work and it's interesting I didn't really realize until getting into the process things break all the time there's bugs everywhere you introduce a new line of code the whole thing falls apart it's the most mind-boggling thing and you absolutely need somebody that knows what they're doing to really help orchestrate that especially in healthcare because if you've got a clinic that's running it and it breaks like you need somebody that's right there that can fix it that knows what's going on that's non-negotiable.

Communicating your vision to developers and investors

>> Yes, I I agree. You're right that like getting your vision into some sort of either a prototype or even talked about this on another podcast episode that you always hear about companies that started with a drawing on the back of a napkin.

You have to be able to communicate in some way what is the thing that you're building to the people that can help you build it. But then you need to also go convince the people that you want to help fund it or the the people that you want to recruit to come be on the team as your attention is drawn away from maybe sitting at your computer and vibe coding all day. One of the other functions we talked about right before the call was really how you create a runway for yourself and through fundraising and uh whether it's angel investments or more traditional VC funding, but how you can actually align stakeholders and how you approach even just your capital table strategy because these are people that are going to be on your cap table. They're going to be co-owners. They're going to be partial owners of your company. So, I'd love to hear how you philosophically approached fundraising and I love hearing about this whole investor advisor role that is helping your company a lot.

>> Yeah, absolutely. I don't have an MBA. I don't have any business background and I use Chad GPT and Claude to help me. You know, I didn't know what a cap table was 6 months ago or safe agreements or anything like that. To be able to look at that, understand that my approach was this is built for physicians by physicians. I'm very much a believer that we understand the pain points, the workflows. We don't need another chat or widget or button to click. We've all experienced various EMRs where these solutions to help us actually end up hindering us. I ended up approaching a very large alumni group with the Hawk Society. I had been giving these lectures during our annual events and there was a lot of interest and we had been talking about these solutions already and I I had a lot of interest to build something like that. And so when we built it, I knew I needed some capital to be able to really make this a reality. This is not something you can necessarily bootstrap unless you have very deep pockets. So I approached our physicians a part of our alumni network and said, "Hey, you know, this is what we're building." We had nothing. It was literally an idea and we started our seed our preed funding with safe agreements as a Ccorporation. I told them, "Hey, here's your safe agreement." There's a lot of trust absolutely in that stage, but they all believed in me.

They believed in what we had done with Morning Rounds coffee that we had proven some success in other places. They were all in and even a modest amount, you know, a couple hundred,000 was able to really set the ball in motion. Then we were able to get the MVP up and now we have something to actually show something tangible and then that helped flame the fire to be able to get others to come in. And what's unique about it is as a physician investor, we've asked everybody to be a beta tester. as a beta tester, they get first use of the product. And not only are they testing it, but they're getting initial ROI just by using it and using the functions, but they can orchestrate and be part of this physician advisory board to say, "Hey, Justin, this isn't working. I don't like this. Change it." Or, "This is broken." Or, "Oh, this would be really nice to have. This is absolutely the top feature." And, you know, we were on with Todd recently. you know, Todd had a patient that that was trying to refer through our system, but they didn't have the patient next to him, and they weren't able to schedule the patient. So, they wanted a link sent to the patient to be able to refer them. We were able to build it that evening and deploy it the next morning. And so, we've built this architecture now that we can deploy very rapidly with very good and thoughtful feedback from our physicians, which is super cool.

Turning physician investors into aligned beta testers

Well, you think about starting a software and you talked about all the bugs and you talked about how like things are like definitely not going to work sometimes and how great it is that like the people that are going to be giving you feedback are people who are like fundamentally aligned with your success, right? They're on your team. They're excited about it. They want to use it. They want to this company to grow and be very successful and for their investment to be successful as opposed to like early users who are beta testers that are just like, "Man, this sucks." Like, >> toss it away. Yeah, >> you're absolutely right. And you have to frame it that way. You know, even with our betas, we say, "Hey, you know, this is a beta. There will be bugs. I want to know about it. Tell me." You know, because as an orthopedic surgeon or as a clinician testing software, you expect it to work instantly. Unless you're like in the weeds, as you know, things there are little, you know, this button doesn't click or this goes in a weird place, you know, different things like that. And you can beat it up as much as you want with your your QA team, but until you pressure test it, do you really know what's going to work and what isn't working?

>> For sure. I think the other thing it does, the way you approach this, which I I think is just so smart, is it puts people around you. I think it can be very lonely to be a soloreneur, even if you're really driven by your vision. One of the pieces of advice that I've I've heard from a lot of people is whatever your vision or your idea is like the first thing you should recruit is advisers. Even if it means like giving, you know, a totally reasonable amount of equity of something that isn't worth anything yet. Like something that isn't worth it. Like I literally have like a piece of paper. I I mean I did this today on a new concept. I recruited a new adviser on an idea on a piece of paper. It's not worth anything. But having some people in my corner as I'm just getting started with the validation and the discovery on on different concepts, it's like man, it feels so much more inertia, so much more like motivation. You feel like you have a sounding board. You have a network to rely on. It's like, oh well, I have no idea what to do about that, but I know who I can ask. You know, >> absolutely. We've been very fortunate to to have each other co-fellows, but we brought in one of our mentors, Mike Milney, who is also part of our fellowship. He's business background, Wharton Business School, and he's been really able to help be that sounding board. And a, you know, this is how you talk. There's definitely a lingo and terminology that you have to learn. Uh, it's completely foreign and unrelated.

You mentioned this on one of your prior podcasts. We physicians love learning. I went to school for 14 years after high school. It's it's a passion to get into a new field, learn something, use your expertise. And our expertise is very very helpful, but it's especially when you step into a different field like business, you got to jump in, know your limitations, get the right people around you.

The changing SaaS landscape

That's really been a huge part of our success is that >> there's another thing I was thinking about when we were talking. I've talked to so many physician founders in the past couple months because of the program we're running. There's a lot of people building SAS models. And so for those listening that aren't in the software world, this is the software as a service. This is like a QuickBooks or other services that you buy this software platform and you subscribe to it. I think there's going to be some challenges in that field with how much the market's become. It's open. I mean, anyone can code now and everyone can code a lot faster now. What do you think are some of the challenges in the SAS market and how are you thinking about that considering that you are building a platform? like how are you positioning yourself so that you're not going to be have a problem where I have talked to founders where they're building something so narrow that I'm like literally at some point every hospital is going to have a chief AI officer and they're going to like just approve requests to just pre-made like just custom make anything that people within the system want. So like your feature could be something that Epic just turns on overnight and you don't have a company anymore. So, how do you think about that building a SAS platform?

>> Yeah, that's number one question I get asked by my investors is what stops me from, you know, copying everything you're doing. It's multiffactorial. To speak to the the giants, it's easier to turn a speedboat than it is a, you know, a cruise ship. And so, fortunately, you know, being a startup, you're very nimble. You can pivot, but you have to have your eyes open to the future. You know, in the last 3 months, we've seen more innovation in artificial intelligence than in the last 3 years. We're on a rocket ship. I mean it is unprecedented especially with a recent release of Fable Mythos and then now Chad GPT 5.6 Saul, it's unbelievable. I mean, these tools are awesome, but they're very scary. I would say the moat that we're building around us is the security compliance, right? That's one. So, it's the infrastructure, the company, the security compliance because that was not cheap. You know, that cost us, you know, tens of thousands of dollars to to build that and get that going. When we talk about artificial

intelligence and, you know, how does AI work? AI is a machine. It's a machine that's good at guessing at its core. And it's only as smart as the information that you give it, the context and the instructions of what to do with that information, the prompt.

Prompt engineering, context engineering, and AI agents

So prompt engineering and context engineering very much have a huge influence on the validity and the the output that comes out of it. And so when we talk about agentic systems, an agent is essentially an LLM, a large language model, an AI like chat GBT and so forth that has a very specific prompt, instructions, a very specific context, knowledge of what it's doing, and then an action and tools at its disposal. And so where we're heading is we're heading into agentic systems where you've got sub aents because AI is only good for very singular finite tasks. When you start doing multi-layered tasks, it starts to get dumb and you can't go over a certain, you know, limit in its context window. And so you build sub agents orchestrated by super agents over the top. The special sauce is not only how you organize that, but two, the context engineering and the prompt engineering. And if you look at my computer, I've got Obsidian with a brain that's got all the files and everything. It's collecting that, creating that table of content. So it knows what information to pull when.

Because you could dump all that knowledge, but you'll blow up the context window and it'll start hallucinating. Very thoughtfully crafting these prompts so that it's going to be replicable every single time because especially in healthcare, it's got to work the first time and it's got to be consistent every single time. We're making big decisions. And then another piece of it too is FDA regulation, right? When we talk about compliance with FDA, we're very much heading into the days where it's going to become considered standard of care to use these tools that not using them may be considered malpractice and we definitely need to be a part of the conversation in the development of this and how the FDA regulates it. But I'm very much as we said a believer that there needs to be a human in the loop. I think these are tools not to replace but to augment and enhance us to help call attention to different things when they should be. But at the end of the day, we are the decision makers and I don't think anybody wants to take over that medical legal responsibility. >> This is such a great example of how you as a physician, as a subject matter expert, as someone who's built and run a practice, why you are the right person to build something like this. A lot of people, especially doctors, don't realize how many companies are built by people because they had an experience in that realm or they like had a a family member who had that issue. The best example is some endocrinologists I was working with. She was like, "This diabetes company called me and they don't have anyone clinical." And I'm like, I know there's people building solutions for really good reasons, but they don't actually talk about context window for the agents. Like context window as a founder, like you are actually bringing your context window as a surgeon, as a physician, as someone who started a practice. You could be very very strategic about how you bring that subject matter expertise to to build something that other people cannot. >> You're absolutely right.

Using AI internally to build a leaner company

It's because I speak both languages that this has so much power, right? I've had several medtech companies call me and they're like, "Yeah, we'll meet up like quarterly." I'm like, "Quarterly?" You're going to have zero insight in what you're building. It has to have a lot of organic and very consistent, especially with the pace that things are moving. The company is building AI, but we're using AI to build AI. So very much throughout the company, we're using artificial intelligence to help orchestrate and not only keep our burn rate low, but be able to be nimble and keep things moving as quickly as possible. Because if we're building a platform to reduce overhead for physicians, why aren't we using it or a similar type concept internally to make sure that our business is running as lean as possible too?

>> It's a great time to be building. I would love as we wrap up if you can share when this is out in the world and successful and at scale like what's your vision? How is medicine better with what you're building?

>> So, what we're building is an agentic solution to your clinic. It's specialty agnostic and essentially we're working through the food chain through automating intake, triage, patient debrief as if a fellow was in the room coming out and presenting everything to you. obviously AI scribe and then synthesizing that into your medical legal document, referring provider document, your patient education note and then billing and coding and just moving through the

food chain and trying to make it so that there are as little clicks as possible for a physician. The beauty with AI is now we have the ability to take so much information and synthesize it whereas before it was just daunting and took too much time. So being able to pull in wearables, being able to pull in other data, synthesizing it so that now we get actionable things to help our patients peroperatively, nutrition, all these different things where it was just too much time or there's not a CPT code for it, so I'm not going to, you know, I've got 15minute consults and I've got eight patients every hour. So, it's helping to deburden that and just give physicians that opportunity to spend more time with their patients, build that relationship, which AI will never take over, and then two, be able to come home at a reasonable hour and have time with your family and your kids and not have to be doing notes or administrative work for two hours in need.

Making independent practice more accessible

>> I think it also lends a pathway for people to start a practice who otherwise might not have started a practice. Right. >> Absolutely. I was building it for myself and that was part of the name with some of our partners. We're not stopping just at the ambulatory practice, but building layers on top of it to help be able to run the business operations of a practice. The future is bright and we're really excited.

>> That's great. As we wrap up, how can people find you, Justin? >> Yes. So, if you want to reach out to me personally, you can find me on LinkedIn, Justin T. Smith MD, and then our website if you would like to submit. We are still taking physician investors that want to be betas as well as early users.

Uh we're aiming to go to market here in the next several months. and our website is turnkey.io. >> Great. Well, thank you so much for sharing your journey and your learnings along the way. Um, I hope this was inspiring to some of the people listening who also have ideas of things they want to create. The best first step is to take the first step. So, definitely feel free to reach out on LinkedIn to Justin or me. We love supporting other physicians on their journeys. So, thank you for joining me, Justin, and thanks everyone for listening.

Yeah, thanks for having me, Alison. >> Thanks for listening to the Startup Physicians podcast. This community was built for doctors who want to contribute to the future of healthcare. We offer support for physicians who are ready to make the next step towards building the career they've dreamed of. Visit startupfysicians.com to learn more. And if this episode resonated with you, share it with another friend who needs to hear it.

Let's change the future of healthcare together.