Hello, there! Welcome to another episode of Q&A about business innovation and managing life. Let's see, I see a bunch of questions here.
The question here from Samantha.
How would you think about choosing a college to attend what influenced your own decisions? Well, it's interesting question. I think one of the mistakes people sometimes make is they think that colleges are sort of linearly ordered in a ranking of quality or something. And you know there are all these things like the you know, there are all these listings of colleges, from college number one to college number 1,000, or whatever. This is. You know, colleges are all different, like companies are all different.
There are, they are, you know, some colleges are places that are nice and small and friendly. Some colleges are big and industrial, some colleges. The professors spend lots of time with students, other. The professors are really good at research, and know lots of cool stuff, but don't really want to pay attention to students, etc. So I think the 1st thing to realize is, the colleges are not all sort of equal.
and you shouldn't sort of say, well, I'm just going to apply to the top colleges, and because they're top of the list, so to speak.
the colleges, which will be a good fit for you, and what you're interested in doing, and not such a good fit. And I think the other thing that tends to be the case is that in a 1st approximation, I think the algorithm of sort of college admissions is, admit more students who are like the ones we already have
in a 1st approximation. Occasionally people will try and put their fingers on scales to change that. But that's a good 1st approximation, I think, to how to think about what's going on. So if you see yourself as being similar to a bunch of students who are at college. X. In some way that everybody's very cheerful. Everybody's very hardworking. Everybody's very whatever.
That's something of a clue about. That's a college to go to, and colleges have very different characters like not to name names, but some of them are like everybody's achievement oriented others are. Everybody wants to have fun, others. Everybody wants to learn as much as possible and doesn't matter that they don't have fun and and whatever, and that they're not going to make the best network for future life, and so on.
You know, there's a question, why do people go to college disappointingly. The surveys suggest that a surprisingly small fraction like in the single digit percent of people go to college for the sake of learning.
The most common reasons are things like because I want to get a credential, or because I want to kind of go away for 4 years and and sort of have fun or whatever, or because, you know, a variety of other kinds of things like that. The I want to go to college just because I want to learn stuff
is not the most common case by any means. Now, doesn't mean that there's nothing wrong with other things like, I want to go to college because I want to be a doctor, and I got to go and do pre-med studies in order that I can go to medical school and become a doctor. That's a perfectly reasonable reason to want to go to college, so to speak, rather than I want to just sort of understand more about life, the universe and everything for its own sake, so to speak.
I mean, I think realistically, that sort of particularly in High end colleges. You know some part of what people are trying to achieve is to sort of build the network for life, so to speak. Maybe in other places, too, to meet meet an interesting crowd of people. And that's again something that I think realistically affects at least some people's choice of college. If the main goal is just, I want to learn things for my own internal purposes

doesn't really matter who you meet in college, because you're mainly trying to just get something for yourself, so to speak.
I think. You know, a a good clue about what college one should
go to is figure out, you know. If you say well, I think I want to study this and this and this. Okay, go look at the course catalog for the colleges you're interested in and say, what courses would I do in the 1st year or 2 that I'm at that college.
And if you realize oh, gosh! They don't really have any courses I'm interested in. Well, that's not a good sign for that college.
Sometimes you'll find there are colleges that are sort of if you want to do some very specialized thing like you want to do high end, pure mathematics. Let's say there are colleges that are just too small. They just don't have the courses that you need. If you want to go through and do sort of high end, pure mathematics, and go and get a math Phd. Or something like that
in most fields. Colleges mostly will, you know if if you're not trying to do sort of the high end version of some particular field, you know, most colleges will have the courses you want, so to speak.
I think another thing is, there are some colleges that the colleges have very different attitudes towards sort of how how standardized the sequence of courses you should take are, you know, there are colleges that have a core curriculum.
famously places like University of Chicago and Columbia that have sort of a set of courses that everybody is expected to take. There are other colleges. Oh, I don't know, notably places like Brown that have this. Oh, you can pick any course you want, and there doesn't have to be sort of any kind of regularity to the courses you take.
So you know, those are both of those have their advantages. I would say that the core curriculum thing, if you don't really know what you want to learn about. Then, following that core curriculum might be a pretty good idea if you're if you really know, I want to learn this and this and this and this and this, or I want to learn anything that's interesting, and I'm interested in lots of things. Then you can pick every any class you want. Seems like a better thing. I think.
let's see. I mean, then there's the question of okay. So what should one study in college in modern times? That's a complicated question. You know there's been a huge rush to study in computer science don't know what's going to happen, because, you know, there was a time when computer science departments were quite small back a few decades ago. They were mostly sort of doing theory of computation. And then there was this big demand from students of people need to learn how to program.
And so there was a sort of huge expansion of computer science departments, really almost an uncontrolled expansion of Oh, my gosh! We just got to find somebody who has a computer science Phd. Or something that will sort of qualify them to teach in our department. And then there were a lot of kind of what we really need to teach is how to program. But we but we got to have sort of classes that have content in them. Not just sort of skills based how to program. It's a bit of a mess.
And you know quite a lot of the research that gets done in computer science departments. I kind of it's like, really, I mean, it just seems very. It's it's the kind of thing it makes sense. If the goal is to just have some grist for the mill for people to be doing programming.
But other than that, I'm not sure it makes that much sense. Now, does the world need many, many more programmers, you know. For myself, I've been trying to automate many of these functions of programming for the last. I don't know. 40 years or so

we've gotten a long way. If more people used our technology, the world would need a lot less programmers. It's a lot of what's being done is people doing things that machines should be doing for them.
And there's a greater realization that that's what's happening with kind of AI assistance in writing code, although a lot of that is just, you know. Gosh, you should have known you could just take this blob of code and put it here in Wolfram language, for example, the whole idea is to automate, to just have a function that implements what that blob of code is doing, and to have something which you can readily understand.
It's a much more productive kind of environment. And, as I say, the world would need a lot less programmers. If people adopted that more strongly than they have, I mean, it's adopted well, in the sort of high end of things it's not adopted. Well, in the kind of generic software engineering programming world.
And I think that world which has been sort of a Oh, let's go work in the tech industry. There'll always be jobs there. I think that that theory is going away.
I mean, I've noticed in sort of our corner of the world. It used to be the case that people would be sort of from our company, which is, I would say, a very good company in many ways. People would be sort of getting poached by tech companies with some frequency that hasn't happened in the last year or so.
and which is good, I appreciate that. But it also it's a sign of the fact that the tech industry is really contracted. And you know, there have been lots of layoffs in the tech industry. This idea about you learn to program, and you'll have a trade that's good for life. Type thing. I don't think that theory is really right anymore. And this thing that's led a lot of computer science departments to just
dramatically expand. Everybody says if there's sort of a default thing to do in college, it's computer science. I think that's going to go away. And I don't think it's the right bet. Right now, I think that the idea of learning, computation and computational thinking that's a great idea. I've talked about this on other occasions. Unfortunately, that's not a lot of what gets taught in computer science and computer science is a lot about how to program, and there really isn't yet a A and well, there are certainly examples of where there are these things. But as a general matter, this kind of introduction to computational thinking isn't yet a course out there.
It should be. It should have been for a long time. The technology we built makes it easy to make such a course. It's something which I've felt that I should do some work on, and I even started about a year and a half ago now writing kind of a book and course about introduction to computational thinking. But it's not finished, so I have no excuse about people not using it, and so on. Yet.
The.
But in any case it's worth learning, sort of computational thinking. I don't know how worthwhile it is to learn sort of the details of programming of 2025.
But so you know. So there's a question of what should you study in college? Which depends a lot about. What are you trying to do if you're trying to go into a well-defined profession like like medicine or law, or something like this? Then well, there's a set of things you have to do to be able to qualify for that profession, and then sort of the path is fairly clear. If you're trying to be like. Oh, one day I want to be an entrepreneur.
Well, I don't know whether college is even necessarily a relevant thing. It might be most relevant as a way to meet some interesting people, or as a pure matter of branding. I mean, I've known in the last couple of years. I've known several

very bright kids who got into really top schools and went there for like 2 weeks, knowing that they were going to drop out after 2 weeks, just so they could say I dropped out of School X, and yes, they ended up paying for a year of school, but they'd already got funding for their startup, and I guess that was part of the cost of business or something was doing that.
But you know that that's a case where it's kind of schools for branding purposes. You know, there's also schools for networking purposes and depending on what you know. If you want to go into a profession that's very networking heavy. Then that's a reason to care about that.
I think if you want to be a scientist or something a researcher, that's another different path.
I will say that I think that people get the best mileage out of college if they actually got to know professors when they're in college, and I think I've said this probably many times, because it's a piece of advice I've given over and over again, which is, if you're in college, actually go and talk to professors
some fraction of the time. The professors may be jerks, but a large fraction of the time. If you have something that you've prepared properly, and you have an interesting question to ask them. They'll have fun talking to you. Everybody will have a positive time.
I think that's something again. You know, different colleges. There are different levels of access to professors, and you can usually find that out by, you know, asking students who are already there, and and things like this, although you have to take some of that information with a little bit of a grain of salt, I think.
anyway, a few thoughts on on college. I would say that another thing is, when people apply to colleges I don't know. I think some people will say colleges will always say in their applications, you know. Tell us why you really want to come to our college, which could be translated into write an ad for our college.
which is a little bit, I think, unfair and unreasonable for for colleges to do. And I think you know these tell us about. I don't know what kinds of questions they really ask. But you know, tell us about a situation where you failed. Type thing it's like, I don't know. To me most of these kinds of questions are somewhat grim, and I'm not sure what they really reveal.
And you know, it's
I think my only comment about those things is, you know. Don't try and overthink what you think. The person who's reading the application is going to think
you think about them thinking about whatever else it's kind of like. Just be yourself, and write what you think you should write to express yourself as you are, so to speak, because at some level. You want to go to the college. That is the right college for you.
You do not want to go to a college where yes, you could get into that college because you convinced them, and you have lots of sort of smoke and mirrors to do that. But then you get there, and it's like I'm miserable. I don't fit in here at all. I you know these are all people who want to do this, and I want to do the opposite
type thing. I mean, it's a that, you know. I won't claim that the sort of college admissions process is by any means perfect, but it's not absolutely hopeless at taking sort of people who present at sort of fitting people into colleges where
there are people like them who are at that college and seem to thrive there. And I think, therefore, the more you don't act like yourself, the more difficult you're making it for that process to work itself out. I also think that people there's a certain
I mean, having watched particularly from our High school summer program, having watched kind of the a large number of kind of.

you know. Get to know some kid, see what happens when they go to college, and so on. I would say that that it is fairly rare that I say, gosh! That that really worked out in a weird way that I didn't expect.
The you know, it's really, very, very often. It's like, Oh, okay, that kid ended up going to college. X, that's not surprising. Sometimes I say, that kid went to college. X, that was a good idea. They managed to sort of find a place often a less prestigious but better fit for them kind of school where it's kind of like that's a that's a good deal type thing, you know. I think the
what else to say about this. I think it certainly helps. If you've, you know, read the course catalog for these colleges, and you actually know something about them that surely helps in writing a a useful and meaningful application to that college. I would say that.
Yeah. Another thing to say about about college admissions is, it's complicated. And there are all these, you know, early action, early decision. You know all these complicated, at least for us colleges. There are all these very complicated, gamified things that that people do. I think
you know. That's the kind of thing that college counselors know about, and most sort of mere mortals don't know all of the ins and outs of that. And oh, you know. Didn't you know that this college will only have one person from this school? And didn't you know that if you ask for an early decision for this and that, then it cuts off this opportunity for that, and so on, and so on, and so on. So finding somebody who actually knows that stuff
is, I think, a pretty good idea. I think it's pretty hard to. It takes a lot of work to decode that from the web, and so on.
I should say that a lot of the things I've been saying apply particularly to us colleges outside the Us. Things are very different. I mean, there's a much more standardized path in many countries where people who just sort of graduate from high school, you can go to the local college. It's good in the Us. There's a lot of kind of hierarchy of oh, this college is better than that one, and so on.
In a lot of countries it's kind of like, you know, you can go to. I don't know Australia, Germany something like this. These are places where you know there's regional. There's schools that cater to certain regions, and so on. And they're
they're quite good. And there's not an obvious. The university of this is better than the university of that. It's just. And it's something also the dynamics of how people go to college and whether they go to college like a hotel and stay there and have all the facilities there, or whether they're kind of living at home and going to college, you know, every day, so to speak, that's different in different countries. And it's different in different sort of levels of schools in the Us. As well.
I mean, I think people sometimes do these these things in the Us. Where they go to community colleges because they're they're cheap and straightforward for a year or 2, and then they transfer to another college. That seems to be becoming more popular is my impression. I don't have a totally great idea of whether that's a good thing or not. It seems to work out okay for people. I don't know whether you know you get more mileage by trying to do the 4 year college for 4 years. Type thing.
Yeah, I think that's about some obvious things to say about colleges.
Let's see.
yeah, lots of questions. Here.
let's see.
Sorry. Just trying to pick.
Well, Evan asks, what do you wish you knew during the 1st years of building Wolfram research that you now know about business?

Well.
for me, that's a little bit of a funny question, because orphan research is the second substantial company that I started. The 1st one was
5 years earlier, 6 years earlier.
and I made many mistakes in the 1st one that I didn't make in the one I've been running for the last 39 years. I mean the principal mistakes that I made, I suppose in the 1st one had to do with. You know, I hired a CEO because I thought that that wasn't a role that I would
would successfully take. That was a mistake.
I think that the thing that is usually true is sort of starting and running a company is A is a big mirror back on what you yourself are like, because the company will reflect your personality in many ways the good things and the bad things, and that's sort of an inevitable feature. And if you try and make a company where you say I'm like this, and I do things this way. But the company is going to do it differently. It really doesn't usually work out that way.
I would say that in terms of things that I
gosh, I mean, I would say that there were things that I set up
because I kind of had sort of about a 5 year kind of time horizon when I 1st set up orphan research. You know. Okay, 39 years later, 5 years was too short a time horizon. There were things I did with
well, 1st approximation. Anything that
had to do with kind of corporate structure that wasn't just sort of me alone was probably a mistake.
I mean, in, you know, giving stock to employees and things. I didn't take any investment money in the case of Wolf research. I did in my 1st company. Thank goodness, I didn't do that in the company. I've been running for 39 years, because I certainly wouldn't have been running it for 39 years if it had investors who were my bosses, so to speak, they would have fired me long ago when I went off and spent a decade doing basic science. For example, I think that.
And
I would say that you know this whole question about planning for really long term companies is probably very different from most companies that get started which really don't have that kind of time horizon. And I think there are things which, if I had known this would be such a long term company I probably would have set up a bit differently, but but it was not not terrible, so to speak.
in terms of things. I know now I mean I give a few examples. I mean one thing that is very obvious to me now, although it was somewhat obvious, even when I started the company. Any function of the company that you, as CEO don't understand is not going to be done terribly well. so it's really, you know, you kind of have to understand or set things up so that what the company is doing is mostly stuff that at some level, you understand. And you know there are cases. One thing that I did correctly, I would say, is, there were things that were sort of critical to the the business of the company making great software, figuring out how to distribute that software, figuring out how to explain that software and so on. That was core stuff.
Then there were things like getting our transaction processing system set up perfectly, getting our Hr systems perfect, getting all these kinds of things perfect.
We did those things initially, quite sloppily, and that was just fine. I mean, eventually things broke and we had to fix them. And eventually we built nice, wonderful systems for all those things. But we didn't do that at the very beginning, because it really wasn't core to what we were

trying to achieve as a company. And you know the thing that is a mistake is to say, Okay, I'm doing this company now. I want to set everything up in the most perfect way about everything. because, you know, that's just takes lots of effort and often money to do that. And it's kind of like a
it's the wrong thing to emphasize when you're when the you know you have to know at any given stage what is the core thing you should be emphasizing.
You know I have to say one of the ironies of companies is whenever a company sort of built a beautiful piece of office space with a lovely lobby, and so on.
That's usually the point at which the company is about to sort of go down. I don't know why. It's a kind of an irony of these kinds of things. Maybe it's not always true. Maybe one mostly notices it when it's happened. But that's an example of something which is probably not core to the company that you have sort of the most elegant lobby to your building, or whatever it is. I mean, maybe for some companies that's a key part of the image
of the of the company, but mostly that won't be the case, and that's often kind of the it's like, you know, the wrong things are being emphasized at that point. It's not to do with what is really core to the company.
Let's see.
nameless is asking, How do you explain what your company does or makes. You know, we are about to have a new home page for Wolfram research.
or actually for our group of companies. We're probably going live next week or 2. And I think it's it's it's it's thing in the 1st line. The 1st page is building the computational future since 1986. So the
what I would say that our website tries to have in a few sentences a good description of what the company does and makes. But for our particular company. It's about sort of making the world computational and doing that through the vehicle of the computational language. We built Wolfram language, and through things that come from that, like Wolf and Alpha and Mathematica, and so on.
So that's that's a i do. I believe some. Sometimes it's for our company in particular. It is a little complicated to explain what we do, because it is something that is sort of a a foundational kind of thing, and that's something that is more difficult to explain than when it's like, well, we do this little box that is kind of like all these other boxes, and so I can tell you what it is, because you know the words, because you've seen these other boxes that are like it, so to speak.
there's a question here. It's sort of more personal history question, but perhaps interesting from Bob during the decade when you were doing your book. That's my book, a new kind of science. How much input were you putting into the company? And how was the company doing?
That's an interesting thing. So I started being a remote CEO in 1991, when I started writing my book, I expected it would take about 18 months. It actually took a little bit more than a decade when I was 1st a remote CEO, the you know email was getting delivered once every 15 min, and it was, you know, by a phone, you know, auto dialing, you know, computer auto dialing a phone, and so on.
And things were getting, you know, faxes were coming through the computer and such like. And it was I was very much a phone in type, CEO. Not that long afterwards screen sharing started to work very long time ago, and so one was able to have kind of discussions that were about code, and so on.
I.
At the beginning I had hired a chief operating officer shortly before I kind of went remote.

and what had sort of happened at that time the company had grown very rapidly. I was injecting far more ideas into the company than the company could possibly absorb. And so that was part of the reason. I decided I'm going to go off and
do a bunch of science because it was going to drive me crazy and going to make the company go crazy, too, for me to be trying to inject all these ideas. The company can't absorb them. What's going to happen? Much better that I kind of throttle back and inject fewer ideas. I think what happened during that time
was the coo I brought in did a good job of kind of sort of organizing things, stabilizing things. The company had incredibly profitable years actually, then.
but the Downside was, it wasn't doing as much. R&D, and in the mid 19 nineties I kind of had to swoop back in again and really push the R. And D side of the company and really build things so that we could get out that time. It was Mathematica version 3 in 1996, and so on. So it was probably a good thing the company really became a much better.
more streamlined, better run company, and I was spending probably.
Oh, I don't know. Maybe 2 or 3 HA day, or something on things to do with the company and the rest of the time I was trying to do science. It was actually, in a sense, it was a very good kind of piece of corporate discipline that I was not sort of there every day and bugging people every day, but it was possible for the company to really get itself organized, which it did for several years. I would say, after that 10 year period. It was also a rather good dynamic that I really came back into the company very sort of refreshed, and with a bunch of new ideas about what the company should be be doing. And that's when we started doing things like building Wolf and Alpha, and so on. And it was, it was really good to have that sort of, I suppose, 10 year quote Sabbatical. Now, I have to say during that 10 year period I was like, you know. Maybe there'll be a coup, and somebody will say, Look, I can run this company much better than you can. That never happened. Somewhat to my disappointment,
because my interest in these things is mostly to to build great products and so on. It's not to run a business for the sake of running a business, but it turns out that I guess I have enough kind of competence at running businesses that it is sort of a better optimization for me to spend my time trying to figure out what to do with the business than to spend my time kind of growling because somebody else is messing it up or trying to pick up the pieces after something gets broken.
So. But I think, you know, during that period of time, you know, there were markets we decided not to tackle.
and other people did, and other people kind of copied what we'd done into those markets. But a number of kind of attempted competitors started up during that time. I think they've all well. They've all failed years ago now, but in some markets we probably would have been in those markets as dominant players had I been paying more attention during that period of time?
Are those markets ones that I'm profoundly interested in? Not really are they markets that our company needs to be in? Not really. Our company would be bigger if it was in those markets. But that's the question of. It's something I sometimes ask people when I'm advising companies and so on
is, you know, if you think about your company, what country do you want to be, you know. Do you want to be the Us. Or Russia, or China? Or do you want to be Switzerland, or whatever else? It's not always the best thing to be the biggest thing in the, you know. It's a question of what what do you want to achieve for your company? What kind of sort of lifestyle and impact on the world do you want to have?

And you know, that's 1 of those decisions 1 1 can make. And it's it's something where there is sometimes a tendency to say, sort of bigger, bigger, richer, better. You know. It's always the better thing to be to be bigger. I'm not sure that that's true. In fact, I know that from my own point of view that's definitely not true.
It's I'm interested in having a company. That is a company that's doing more interesting things, much more than I'm interested in having a company that is bigger for the sake of being bigger. I mean, as companies get bigger, the kinds of issues and the kinds of things you can do with those companies change. I mean, our company is about 800 people, and there are lots of things we can do with 800 people, particularly with the level of automation that we've been building for years and years and years. It's are there things we could do if we had 20,000 people?
I'm not sure that there are things that are that much
to me more interesting than the things we can do with the with the people that we have right now. So you know, there are other kinds of things that one can imagine doing. You know, if I was building a company that was oh, I don't know. Trying to be in some
complicated manufacturing consumer type business. Then we need more people, and that would be the only way to do it. But you know, given the set of things we're trying to do, and for any given company there's sort of a size that makes sense, I mean, you see, with very tiny companies where somebody has been really good at doing some particular thing, whether they're who knows what you know, doing design of some kind, or something like this, and they're really good at it.
and their clients are really, really happy. And then they start growing the company and they hire a bunch more people. And the quality sort of necessarily goes down, and it's not clear that for the person who started the company, that sort of things get better because they're spending their time instead of doing design, or whatever it is that they really like to do. If that's what they really like to do, they're managing other people doing it and getting all upset because the other people aren't doing it as well as they could do it.
And the clients are unhappy because they're not getting such good results and so on. And maybe the person who's running it is making more money. Maybe they're not. Maybe they're having to spend a bunch of money, you know, paying a bunch of people who are not being as effective as they could be. So you know, I think there are depending on what one's actual objectives are. There are different sizes of company that make sense.
Barbara asks, has there ever been a disastrous bug that was so bad? It could have destroyed the company. That would be a nightmare running a software business
for our company. Thankfully I would say, no. The
you know, there are certainly companies that have been destroyed by bugs, like, if you're a company that's keeping people's data and you lose it all, then you're toast.
And you know, there are. There are things like that that can happen, I think, in you know. Have we had situations where there are bugs? We would have preferred not to have had or not to have shipped our products out with. Yes, in today's world that's not such a big deal.
you know. You send out an update, and it goes along. It goes over the Internet, and everybody's happy. Back in the day you would be pressing CD-roms, or whatever. I think there was one time when we
pressed a whole bunch of CD-roms, and we had to throw the whole production run away because of some bug. But the fact that I can barely remember. That means I don't think it was a you know it was a. It was a sad moment. One was basically burning a certain amount of money, because

one had spent that on on making, you know whatever it was, 100,000 copies of some CD-ROM. But was it sort of a company destroying experience. No, it was not
but it was these days, you know. Bits are much cheaper, you know, sending out another. You know. X number of gigabytes, or well, in the end it'll be terabytes petabytes of of actual data in the aggregate, but it's just not that. It's it's not that expensive to do that?
Let's see,
Desmond is asking, what are ways that you use now, or have used in the past to stay abreast of the latest developments in science and technology.
well, you know, I I tend to read some amount of stuff. I you know there's some, you know, some news things I look at some
I guess not very many websites. It's mostly things that get delivered as news digests and so on. And I tend to look at things like I guess I for whatever reason I have the the talk schedules for some universities. I get. I get sent, and that's kind of a useful way to see things. The
the I mean. There are other kinds of trendy type, things that one tends to see. I don't know. For some reason, maybe because I write a blog that's fairly popular, and things I get sent a lot of Pr pictures. Those are actually kind of interesting, I mean, because they're sort of talking about what's trendy and new and presenting it in a way that's intended for one to sort of absorb it.
I think the. And then I talk to a fair number of people. I go to some number of events. I mean, I'm usually I. When I go to events, I always write a trip report for myself, and when that next event comes around again for the next year or a few years later, I'll look back at the previous trip report. And I'll say, you know, was that really worthwhile? Did I actually have conversations I was interested in.
I would say that an important thing about sort of running into people is you've got to actually ask them questions. And maybe I you know, people might think I drill too much for information. But I'm always trying to learn things from people. People usually appreciate it when you try and learn things about things they know about. They also appreciate it. If you already know a fair amount of stuff, so you can ask questions that are interesting to them, and where they learn something from the question as well as just delivering an answer to you. I think those are those are ways I learn things. I learn things from. Well, within our company.
People are always sending around, you know. Oh, here's an interesting thing that we saw in this or that place we have been having. Actually, it's sort of on hiatus for right now. But we have been having Llms. Write summaries of things about Llms. Papers about Llms. As a daily digest of things happening about Llms. I think we found that not enough people really reading that
at this point, I mean earlier on in the in the sort of in the arc of Llm technology that was that was sort of more exciting.
I think.
what else? I mean, you know, one of the things for me is the things that I know I'm working on or have been interested in, where I'm kind of primed to learn about them. And then there are things which are kind of like. I don't really care about that right now. And the question is.
can you absorb things that you don't really care about right now. I've never been very good at that. Fortunately for me, at this point a pretty broad waterfront of things that will show up in the tech industry at one time or another will show up in science at one time or another. I've sort of been interested enough in that. I absorb information about them.
But you know, there definitely are areas, certainly in the past where I just didn't know anything about that area. And I didn't. You know, I just wasn't paying attention, even though in the end it turned out to be something that is important.

And I guess that 1 point of view I tend to have is anything that's sort of popular enough. I try and figure out what's going on with this.
and I guess I know enough now that most things that come in that are sort of oh, this got popular, you know. It's kind of like. Well, I know enough I can. You know it's not going to take me that long to understand it, and so I try to understand it. You know, when it reaches a certain level of popularity, even if it wasn't a thing that I was already primed to be interested in.
And sometimes I say, Yeah, okay, that's the thing. I don't really care about it. And sometimes I say, well, actually, that's more interesting than I thought, and I try to incorporate it in things that I'm doing, and so on.
So
And I would say that,
yeah, in the end. The only way I really learn stuff is by sort of getting involved with the things myself and trying to do projects in those areas and and so on. I'm not sure that everybody works that way. I think some people are more able to kind of learn things without having to fit them into their own egotistical kind of project, structure, or something I tend to. Also.
when there are projects which I've sort of thought for decades. Sometimes I'm going to do this. Someday I'll have a folder in my file system about that thing. I probably have about
between 50 and 100 of these right now. And when something comes in that is sort of oh, yeah, that's a thing about
whatever about nanotechnology or something, or about neuroscience. You know things that I've been interested in and and think I might do something in one day. I'll throw the thing that came in in that folder, and then I'll know, you know, at some point in the future might be 5 years from now, I'll say, Oh, I'm going to, you know. I really want to study this. So I open up that folder, and maybe there are a hundred things in it. I go through them at that time when I'm sort of primed to think about those things.
Let's see.
Deitcher says
AI hype took the world nowadays, and everyone says, replace the developers with AI tools. What do you recommend for people like me, who already lost their job and have issues to find a new one.
Well, I think people have asked similar questions before. I think
the the key thing is to understand what your sort of core skills and interests are. I mean, maybe you've been a Java programmer for the last 15 years, and you yourself, I'm a Java programmer. That's what I do. But the fact is, there's probably something that is a more core aspect of what you're doing, that even when nobody wants a Java programmer. Specifically.
there's something there that might be to do with. I don't know. Project management and organization might be to do with kind of design analysis for building software be to do with understanding customer requirements and so on. You know, understanding what the core competencies, what the core skills and interests are.
then you have to think, how can you refactor those things in the world as the world is evolving today to sort of optimize your ability to fit yourself in, so to speak. I think it's also true that if you look at the world at any given time, there are sort of new opportunities that show up.
And the question is, are the skills that you have relevant to those new opportunities? I mean, you say, being you talk about being sort of having been sort of hurt by AI hype. That causes, you know, people to say we don't need developers anymore. I have to say I was in a meeting just a company meeting just a hour or so ago, where there were a bunch of things we were doing where

I was saying derisively. You know an AI could do that which is in our company. That's pretty rare, because we've automated things to the point where we're really, you know, we've already had the AI boost, so to speak.
This was a case where that wasn't true for various detailed reasons, and that for me was, say, like, we don't need developers for this, we can just have an it's so easy we can just have an AI do it. In any case, I think the thing to realize is that in the modern world.
You know, there are
opportunities, just as there are opportunities that go away. There are opportunities that open up. I mean, the world is going to need a lot of AI psychologists, a lot of AI computer security people, a lot of people doing all kinds of things that just weren't weren't there in the past. And I think, taking sort of skills that you already have.
and and that you can identify as this is the core skill, not the. I know, you know, a bunch of Java classes or something, but rather, you know the core skill that's underneath that, and seeing how to refactor that for the things which are now important in in the world as it's emerging today. I think that's a good sort of direction to go in that regard.
let's see? Kd asks, perhaps thematically along these lines, when will we see the 1st company that has an AI as a CEO?
Well, in terms of sort of things in the world that are effectively running
under an AI. There's plenty of that right now. It doesn't happen to be incorporated as a company. It's not the case that. But there are lots of things, and, you know, automated auctions that are taking place. All kinds of things like that, where the main operations that are being done are being done by Ais, I mean, one could even say, yeah, I mean, so so that's I mean, in
in some sense, any sort of software company is kind of almost a level of this, because it's kind of like, well, back in the day a company like mine, where we're helping people sort of solve computational problems. We could have been a service company. Where what happens is people say, I've got this problem. And then we have an army of people much more than 800 who are off solving those problems for people.
But no, we're not doing that. Instead, what we make is this thing that automatically solves problems for people. And there's more and more extreme versions of that. Now, at what point is the CEO of the company? Do you get to the point where it's all AI all the way down?
And I suppose people are very big on this notion of Agentic AI, where the AI is sort of given an overall goal, and it's then finding the sub goals to achieve that. Or maybe people imagine, although I don't think it makes a lot of sense that the area is sort of finding its own goal. I don't think that really makes sense. There's no ultimate goal for ais. There's no, that's not a kind of a thing that that makes sense.
But in case it's it's like asking for the sort of the ultimate goal of the natural world. But in any case, is, it's this question of sort of when will the legal entity that is the company be controlled by an AI.
Actually, there's an example of this in. There was an example. A number of years ago, this dow, the distributed autonomous organization, was this ethereum venture capital play where the idea was. There's nobody in charge here. It's just code.
of course, that ended poorly, because somebody sort of found what other people would say was a bug in that code, transferred a bunch of money to themselves, and it was all a big mess. But that was a case where it's like this is run by. Well, in that case, code, but it could have equally well been said to be an AI, and you know it's an AI kind of in charge. And then, if you can poke the AI and get the AI do something crazy. Well, that's kind of fair game.

So I think this question of when you know there's sort of an issue in the legal system right now of things. Ultimately, there are sort of people who end up being responsible for things.
Of course, that was already broken a few 100 years ago, when companies came into existence, because companies are incorporated in the sense that they are like like sort of corporeal beings, so to speak, for the purposes of the law. They are in many respects like people.
and so that's already a bridge that's been somewhat crossed. And so at what point can an AI be sort of like a person in that respect, and be kind of treated as far as the law is concerned, as being like a person I don't know. I think that's sort of coming in some respects. And so I suppose in in this question of I mean right now, companies still have to have owners. You can imagine all kinds of ornate things where you have loops of companies owning each other. I think always there's a there's somehow there's a human involved, because the very least you know the the state. If it's in the Us. Where the company is registered, there will always be an incorporator who is some lawyer or something, who filed the paperwork. So there's always
there's always human fingerprints on this somewhere on this company, even if the company is some weird chain, circular chain of companies, and so on. There's always some human involved somewhere in it at least right now. I suppose in the future, maybe these things can be e-filed in a way where no human is involved. But I think for a while. There's going to be, you know. There's some signature there that is, some human somewhere in the process.
And so I think from that point of view, you could say, well, you know, I'm going to turn over the management of my company to my AI. But it's still the case that in the end. You're probably on the hook as being, you know, the chairman, or something of the company, even if you say my CEO is an AI, it's still the case that there are humans sort of in the loop as being responsible for the company. In some sense
I think I need to wrap up here. But thank you for a whole bunch of interesting questions, and I see many more that I didn't get to. So I look forward to getting to them another time.
So thanks very much, and bye, for now.