Brian Gracely (00:01.966)
Good morning, good evening, wherever you are. Welcome back to the Cloudcast. We are coming to you live from the massive Cloudcast studios here in Raleigh, North Carolina. Hope everybody is doing well. Another Sunday perspective show as we move into May, early part of May 2024. The year is flying by. We're more than a third, more than a third of the year done and hope everybody's doing well. I know I am recording this slightly before Sunday. I'm going to be doing some traveling for the next two weeks. So I'm getting a little ahead of some of these shows. Aaron and I sometimes when a lot of travel is coming up, we will try and...

Record some shows ahead of time and this is one that I'm recording a little bit ahead of of Sunday But not a not a timely specific show. So that'll be okay if you're listening along what I thought I would do is haven't really done a sort of like career advice show in a little while and Got to thinking, you know There's there's a lot of weird kind of uncertainty in the market right now You've got some companies that are still doing some layoffs in terms of that. The economy is still you know, it's stronger, but it's you know, it's a little uncertain in spots and

You know, you've got an election year in the United States, which, you know, causes people to be a little more cautious than they usually are. And just a whole lot of stuff going on. But you've also got the under kind of the undertow of a lot of companies are investing in things like AI and some of the new technologies. And so, you know, we've always had people listen to the show that are thinking about forward looking things, forward looking technologies, forward looking companies. And oftentimes, you know, they'll start thinking, well, maybe I should maybe I should jump to

one of these new companies, maybe my company is doing something new, I should look to get involved with that. And that's not unusual. But I thought what I would do is, is dig into a little bit of the, you know, things to kind of, you know, have as a mental checklist. If you're thinking about taking some new job, thinking about going to work for some new group, maybe a new company, maybe a manager or a boss that you've never worked for before. So what I did is I went ahead and made sort of a checklist based on

some of my experiences, some of Aaron's experiences, both good and bad. You know, Aaron and I have both seen our fair share of jobs, but also seen our fair share of goods and bads. We've made some good decisions, some bad decisions and things in between. So I thought what I would do on today's show is dig into that a little bit, kind of give some perspective on some things that just kind of have in the back of your mind as you're evaluating people, evaluating companies and evaluating, you know, what might be the next.

Brian Gracely (02:23.278)
the right next move for you, whether that's in the near term or long term or something like that. So we'll get to that right after the break.

Brian Gracely (00:01.358)

And we're back. And as I mentioned at the top of the show, we're going to dig into this sort of yin and yang of both fear and excitement of learning in a new era. And, you know, as I mentioned, Aaron and I have been kind of going through this probably for the last year or so around AI. He got involved with it a little bit earlier than I did. But, you know, we've been kind of trying to figure out and maybe this is maybe this is our own fault because on the Cloudcast, we tend to.

try and cover a little bit of everything. And so I think maybe in our mind, we're trying to cover a little bit of everything as opposed to sort of digging into certain specific things that maybe are specifically relevant to our day job or specifically relevant to some area in which we can have an impact. But we've been generally trying to learn the bigger picture of it. And I think part of that's because it helps us in our learning process of understanding, okay, if I kind of get the bigger picture, I understand where if something happens,

You know, when this lever gets pulled, when this element changes, it's going to have upstream or downstream impacts on something else. Right. So if, you know, the cost of compute for AI, for example, were to go way down, what are the, what are the ramifications? What are the next things that'll happen because of that? Or if the cost of AI computing stays the same, or let's say it goes up from where it is now, what are the things that can happen that will happen that won't happen? So, you know, I think we tend to maybe.

pick too big of an aperture in terms of what we try and figure out, maybe too general in terms of what we try and figure out. But it's been interesting. Let me put a little bit of context around this. And our process might be slightly unusual, but I'll try and bring it back to sort of reality. For a year, probably a year or so ago, maybe even a little more than a year ago, even two years ago, we started getting a whole bunch of pitches from people. And so for those of you that don't know,

part of doing the podcast is we only know so many people in the industry. We've been very fortunate to get to know a lot of people, but we only know so many people in the industry. And a lot of people reach out to us and they say, hey, could so -and -so come on your podcast, right? Sometimes it's represented by some agency. Sometimes it's the person themselves, but anyways, a lot of people reach out to us and say, hey, I think I would be interesting. I think I have something interesting to say. I think I'd be a useful guest to your audience and so forth. And so we have to go through the process of figuring out.

Brian Gracely (02:22.858)
Does that make sense or not? And what we noticed in the AI space was a lot of the people that were put forth to us, whether they reached out themselves or through somebody else, were in terms of qualifications, in terms of background, were like incredibly, incredibly interesting and incredibly well accomplished. So, you know, it wouldn't be unusual for somebody to go, yes, I'd like to propose a certain person.

They spent 12 years starting the AI research lab at MIT and then had a presidential fellow opportunity at Stanford and then went off and did this. And you can have different opinions

about should that sort of big academic record or something that's done in academia or research be put on the same level as somebody who starts a company and builds some amazing technology, whatever it is. But anyways, we were getting these.

We were getting these backgrounds and resumes that were quite honestly sort of overwhelming. We asked ourselves a lot like, you know, do, should we have these people on the show? Because quite honestly, we very well may be asking somebody who lives at an incredibly, incredibly high level of knowledge of something, kindergarten level questions. And A, we didn't necessarily want to put, you know, waste their time. And then to a certain extent, you know, we really weren't sure.

that we were qualified to even just be talking to these people, right? I mean, obviously we were curious about the things that they were interested in or that they brought to the marketplace or that they were working on. And we were interested in their point of view, but there was a certain amount of, and I don't even want to call it sort of imposter syndrome. It was just like, it'd be like having your kindergartner talk to Albert Einstein and just being like, I hope we're not wasting that person's time because the things they're doing seem to be really important. And if they're going to spend an hour doing something,

waste their time. Anyway, so we went through a lot of that the first couple of years. And to a certain extent, we still go that. We still go through that sometimes when people reach out to us and say, hey, we'd like to come and talk to you about this thing. And that's bled through quite honestly in a few of the podcasts. Sometimes we cut things out, but there are many times when we have to sort of apologize to the guests for saying, hey, I know this seems like an incredibly dumb question, incredibly simplistic question. I really apologize for making you go.

Brian Gracely (04:47.336)
this low level of explanation, but would you mind doing that? And I think that to a certain extent kind of captures a little bit of what we've been going through is that it feels like to a certain extent with AI, it's a technology or a set of technologies or a field of study that's been around for a very long time. And for a very long time, as we've talked about on some shows with folks like Sam Charrington and other people, the technology has sort of

shown itself in various ways. In some cases, we don't even know that it's really doing the thing behind the scenes. It's a recommendation engine on Amazon or it's something making a prediction about the weather, like on the weather app or something. But we don't really think about that as like, oh, that's AI. We're just sort of like, oh, that's, you know, it's been given its own name. Oh, it's a recommendation. Oh, it's a prediction. And so we're like, well, no, that's just statistics or that's just, you know, whatever. And we don't necessarily think of it as like,

machine learning or artificial intelligence or something, right? There's this weird sort of hierarchy of terms. But anyways, you know, as we've kind of dug into it, we've kind of told ourselves, okay, it's okay to do that. Because quite honestly, you know, as we've talked about, you know, when

chat GPT kind of came along, it was kind of the moment when the mainstream was introduced to AI. And I think of it in the same context of

Yes, there were lots and lots of mobile phones and there was lots and lots of things before the iPhone, right? There was Blackberry and there was all sorts of devices and so forth. But the iPhone essentially unlocked the whole concept of computing in your pocket, of mobile computing, of the entire internet and all sorts of incredibly powerful things being put into a form factor that can be brought to the individual that they could take with them at any moment in time, right? It wasn't...

as clunky as like walking around the laptop. It wasn't a desktop that needed a desk. It was the entire thing. And to a certain extent, chat GBT was sort of the iPhone moment for AI in terms of most people could grasp the concept of I'm going to interact with this thing and it's going to give me back information in a very different way than I ever had before. And that the way that information came along is quote unquote AI, right? And so we've been going through this process of trying to figure things out.

Brian Gracely (07:12.196)
And so for myself, one of the things that I try and figure out and that I struggle with and I'm trying to get better at is kind of the process of learning something that isn't entirely new. Because again, like I mentioned, the AI field, the domain, it's gone through lots of different iterations over the last number of decades, not like the last couple of years, but the number of decades. You can go back and look up things like AI winter and machine learning and predictive analysis and, you know.

all those sort of things kind of came before we started calling everything AI, is to figure out how do you start? Where do you start? Where do you start is probably better than how do you start? Because starting to learn is not hard. There's lots of ways to do that, blogs and videos and online courses and asking a friend and all sorts of things, webinars. But where do you start? What are the most important fundamentals to learn? What are the most...

elemental building blocks that if you don't understand these basic things, you're going to struggle just in the field as a whole. And then, like I mentioned, to a certain extent at the top of the hour, you know, which things are most important to you, right? And this is this is where it gets really interesting because there are going to be a set of people who are going to see things like AI and they're simply going to look at it and they're going to go, I don't care how it works.

I don't really care how it works. I just want something that's going to make my life easier, make me better at work, save me time, save me money, whatever that might be. And a friend of the show, Coté, who folks know, Michael Coté over on Software Defined Talk and other places, he's done a great series of videos talking about just how do you kind of build your own personal roadmap, if you will, to using AI technologies. And he sort of talks about...

experimentation and using different tools and kind of trying to put yourself in a different situation. So there's that and that's going to be there's going to be a subset of people in the industry, whether they are people we think of as being tech people or whether there's people who have interacted with technology in which that's going to be their world. And if it goes no farther than that, there will be lots of advancements in that space that will make their life better, right? Whether they are trying to

Brian Gracely (09:33.632)
you know, do things with writing or come up with ideas or writing software or trying to generate, you know, marketing content or visuals for whatever it might be. Right. And then there's going to be people who are required or are interested in learning more about kind of the fundamentals of it. Right. Like, how does this stuff work and how does a connect to be and could, you know, if it was a path of ABCD, like, could one of those be skipped?

Right? Like what will be the thing that will move us forward? What will be the thing that will change the economics of where we are today with that? And I think to a certain extent, Aaron and I fall into that category. Not that we didn't fall into the previous category of, you know, kind of looking for some tools that'll help us make life easier. And so what we've been going through, what I've been going through is first and foremost, figuring out, you know, where do you start the learning process? Should you be looking at models?

Right. You know, our models, kind of the fundamental building block of AI, is that the most important thing to be looking at? Or should you be looking at like use cases and workflows and, you know, just sort of problematic spaces in society, in your life, in the business that you work in and sort of maybe work backwards from that? Right. That might be another way of kind of working backwards to the solution from the problem. Should you start at the core technology and then start exploring? Well, could it?

Could it do this? Could it do that? So there's a certain amount of that that I'm going through that I'm trying to figure out what's the right way to do that. The second thing is once you then figure that out is to go, okay, what are the most important things? And it's really interesting because the space is moving so fast and the level of confidence or irrational confidence from the people that are working in this space. And again, this is where you get into kind of going,

long has this person been working in this space? So you read a blog from somebody, for example, you watch a video, you know, watch an online video or something and you kind of go like, how long have you been working in this space? How much confidence should they have? Have they been working on this for 10 years and they've got a PhD and you know, whatever crazy math that's behind the scenes. Like, yeah, that person probably sort of deserves a bunch of at least respect or at least recognition that like I should give their, their ideas and their

Brian Gracely (11:54.238)
knowledge, you know, certain gravitas, right? There's other people who have that exact same level of confidence that have been working on this for six months and have done nothing more

than build an application that interacts with like the open AI API, right? And so the hard part is kind of figuring out sorting through the signal from the noise of like, which one of those people should I believe in, you know, which one of them, and it isn't always, you know, just sort of longevity is right. In some cases, it's just like,

That's a really smart person that this is all he's been doing for six months, right? So that's a weird space to be. The second space is that so much of this stuff is moving quickly that the thing that you heard about three months ago or six months ago or a week ago or whatever, you're still sometimes trying to get a sense of, you know, kind of balance, kind of focus, you know? So sometimes if you're, let's say you're on a boat and the boat's rocking and you're trying to get your balance or you go into some place and the lights are really bright or they're really dark and you're trying to get your focus a vision.

There's a certain feeling of that with AI right now, where, for example, this is just something that I've kind of gone through is when people talk about models, right, they'll talk about, you know, the number of parameters that were used to train the model. And so we hear about models that have 7 billion parameters and 13 billion parameters and 70 billion parameters and a trillion parameters, right? And so, you know, you start hearing about all these things and they're all based in things with really big numbers.

Right, so if somebody told you, hey, I have essentially a model or a database that has 7 billion parameters within it, you might go, oh, well, 7 billion seems like a pretty big number. That's a pretty big model, right? If you don't have any context to it. And then if somebody comes along and goes, oh, no, no, no, that's a cutting edge model from 2019, then the cutting edge now is at least...

a hundred billion parameters or 500 billion parameters or whatever the next sort of number is. And so you go, okay, all right, I guess we're in this sort of chase for the bigger it is, the better it is. Or if it's the bigger it is, does that make it faster? And so you start going through this thing in your mind of like, okay, what have I dealt with before in which things were consistently getting significantly bigger all the time? And you're like, okay, is this like chips where every...

Brian Gracely (14:18.46)
12 months or every 18 months, like a CPU would come out and the speed would double or the amount of memory it could hold would double and you'd be like, okay, that's just a normal pattern or are there big breakthroughs that have happened that have moved us from 7 billion parameters to 700 billion parameters, right? So, there's certain really fundamental things that I find myself trying to wrap my head around. And again, this is...

you know, somebody who's been doing technology for a long time, but kind of going and dealing with this is very much of a newbie. So you try and figure out your starting point. You go look for your sources of learning and there are tons and tons of sources of learning. Everything from blog posts that go into lots of detail to YouTube videos to things like Stanford and MIT have AI

courses that are out there on the web and Coursera and other stuff. So there's a richness of that. We'll put some links in the show notes for folks that are looking for those things.

And then the next thing that I find is at some point, you know, you go through that thing and you kind of, you kind of put yourself back into when you were in, you were a student of some sort, whether you were in high school or university or some other way that you learned. And you start having to think about, okay, whenever things are new, you're going to be presented with a tremendous amount of information and you're going to go through it in the best way that you can, whether you are.

reading papers or you are doing stuff online and sort of testing yourself out trying to build something, whatever it might be. And for a while you're kind of in the process of consuming information, trying to apply the information, but you're not always kind of trying to put it in context. Like, is this important? What does this relate to? Is this a centralized thing? Is this sort of an adjacent thing to the centralized thing? And so,

You know, the other thing I'm next time I'm trying to figure out is at one point, do I sort of stop and step back and look at things and go, okay, I understand that it's a fundamental building block or to sort of adjacent building block, or it's, you know, it's in the news or whatever, but what does it mean? What does it matter? Like, you know, we learn these things, but, but what does it matter? Like, what does it matter that something is bigger or faster or, you know, gives you seven different options? Like.

Brian Gracely (16:37.626)
What does that mean? What does that relate back to in a business context? What does it relate back to in terms of the broader technology kind of landscape and so forth? And so that to me feels like the second thing that I'm, I'm constantly going through, which is first was what to go kind of dig into. Second is when to step back and try and put some context around it so that if I'm digging into something, maybe I don't dig as deep because I go, okay, that, you know what, now that I really think about that and I really understand it now, it doesn't matter that much.

this other thing matters twice as much. So spend more time digging into that. So I'm trying to find kind of the right cadence of when to step back at these things. And then the third thing is in my case, in Aaron's case to a certain extent, and for some of you, this may or may not matter, but oftentimes one of the things that I have to do, whether it's my day job or on this podcast or whatever, is be able to explain it. And I say that, and it's probably something that...

is probably a valuable skill for a lot of people is that if you are working on something and it really doesn't matter if it's technology or if you're an accountant or you're a carpenter or you're whatever, at some point you're going to have to interact with other people and there are plenty of people who are really smart about certain things or really skilled in certain things, but they struggle to a point. They could be excellent up to a point, but they maybe struggle.

to advance their career or advance their capabilities or grow their business or whatever, because they don't develop the skillset to be able to explain things. And I explain it in that old kind of cliche of explain it to me like I'm a six -year -old, make it simple for me, I don't need all the details, but please kind of get the main point across, or also explain it to somebody who is going to be your peer and needs the details. But...

is in a learning curve sense behind you and you're trying to help them accelerate and so forth. So, I find myself oftentimes, once I've figured out something, once I sort of stop and look at it in context, is I sort of force myself to go, okay, can I explain this? And just explaining it, writing it out, oftentimes you find yourself realizing, I don't know this as well as I thought I did, right? I can't.

Brian Gracely (18:57.301)
I can explain the first couple of things, but I can't get to the conclusion. I can't get to the why it's important. I can get to the what it is, but maybe not the why it's important. Or I seem to be able to explain it to a technologist, but I can't explain, I can't put the numbers next to it to explain it to somebody on the business side of the world. And so, you know, that's, that's an element of trying to, you know, kind of learn this that I'm going through as well. And I'm sure some of you, you know, have to kind of go through it as well. And the last thing that I find is, you know, and I mentioned this a little bit at the beginning is,

At some point, you're going to realize, I got questions, I'm lost. I don't know if what I'm looking at makes sense. I don't know if what I'm reading is important, all those types of things. And you kind of have to ask yourself, you know, you have to go ask people questions. And again, this goes back to figuring out, you know, who do you ask questions of? You know, who intimidates you? Who do you feel like you're not wasting their time?

I'll give you an example of something that sat with me for a long time and I've had to deal with it. I've had to figure out how to deal with it over my career. So many years ago, I worked at a company. I worked in their research group, if you will. And I was a product manager, so I was trying to put together, I was trying to find the intersection between the interest...

kind of the interest in the technology, the applicability of new technology, but also trying to relate it in a business context, right? So that Venn diagram, if you will. And one of the things that we were fortunate to have was to have some really, really smart engineers that we got to work with, you know, sort of distinguished engineer level engineers. And I went up to one of them and this guy was patently brilliant, you know, had dozens and dozens of patents in a bunch of different domains. So just, you know, kind of...

of one of those like the smartest guy in the world that you know, you know, in real life. And I went up to him and asked him a question. I said, hey, Billy, you know, I've been thinking about this thing. And in my mind, I had been thinking about it for like a week. I'd been trying to come up with all the different angles to it. I've been trying to figure out, you know, I can't even remember what exactly it was. Was it important? You know, will this work? You know, kind of

those types of things. But I've been literally felt like I've been thinking about it for a week and kind of racking my brain and was like, okay,

Brian Gracely (21:10.706)
I'm at the end of my wits. I'm going to go ask this really smart guy. Hopefully he can give me a way of thinking about it and ask him the question. And I said, you know, blah, blah, blah, whatever. Here it is. The question. And he, and he looked at me and he paused for a long time. I mean, probably a good 10 seconds to the point where I was like, did I, did I mumble? Do we not speak the same language? You know, kind of that, that level of awkwardness. I mean, it was a long pause, 10, 15 seconds. And, and then he kind of took a deep breath and he said, boy, you know, I, I've.

I've never even thought to think about it like that. And the implication that he basically made was that that's such a simplistic way of looking at this really hard problem or whatever it was that somebody who's really smart had never conceived the idea of like, you know, I should think about that, that whether it was like a minute detail or whatever it was. And I think there's a lot of times when we we work on stuff, we think we're working on something.

diligently, we're putting our best foot forward. And we realize like we're up against it. We can't go any further with the knowledge that we have or the ability to sort of learn the way that we're learning. Not that we can't push through, but we need some sort of help. And there can be a level of intimidation to go ask the person that you know is smarter on this stuff, is way more qualified on this stuff. And I think the only thing, the advice I would give is just, you know, you...

You just have to sort of live with the idea of like, there will always be times when you just don't know. And there will be a thing that you think is a dumb question or a great question. And you just have to ask and live with whatever the feedback is. And hopefully the people that you're working with are reasonable and don't, you know, don't make you feel like an idiot. I know plenty of situations in which they will make you feel like an idiot. And that's, you know, it's kind of part of the technical hierarchy. It's not great, but it happens. But you have to be willing.

to go, hey, if I really am interested in learning this stuff, like I have to ask the questions and I have to find people that, A, I'm not necessarily afraid to ask the questions of, but B, have knowledge, like know the answers to the questions. So, I think it's worth taking that chance, reaching out to some people and just being like, look, maybe we don't know each other, maybe we do know each other really well, but I have a question, can you help me with it? So anyways, I think as I've been thinking about,

Brian Gracely (23:32.591)
this process. And again, I didn't actually get into like lots of AI stuff, but I'm sort of thinking through the process of like, what happens when you go and learn something that feels very new and different and uncomfortable and so forth. I think the areas I've been focusing on are what are the most important areas to focus on? And hopefully, hopefully those are going to be the

most relevant to the area that you work in. The second area is, you know, how do you determine legitimacy, especially when there is

so much happening, so many announcements, so many blogs, people are putting stuff out there and all that kind of stuff. How do you then force yourself to figure out if you know it well enough? Can you explain it to people? Can you put it in context? Can you step back and realize like, okay, should I keep learning in this space or should I move forward? And then finally, going back to sort of the title of this, the sort of fear and excitement is to be okay with asking questions when...

there's probably gonna be a level of uncomfortableness. So anyways, that's kind of the process that I know both Aaron and I have been going through. We're fortunate enough to kind of have each other to sort of go, hey, I have a question. It might be a dumb question, it might be a hard question. And there's times when one of us knows the answer and one of us doesn't know the answer and we'll go off and kind of figure it out. But yeah, I encourage anybody who's trying to figure out this new space. And again, I put this in the context of AI.

Maybe you're just trying to learn something different than what you did before. Maybe you were in, you know, security before and you're getting into, you know, writing software or something and you feel uncomfortable. But that's kind of the process that we've been going through. And it is, it is something that, I mean, literally on a daily basis, you, you go from, I am really excited about this to what in the world am I doing? I don't understand it. Like there's that sort of fear and loathing kind of thing. And then excitement will come back maybe an hour later or something, or a day later.

So, you know, it's something you have to kind of press through. It's something you have to be a little bit determined to figure out and just realize that there's going to be plenty of days when you're just frustrated because these things don't make sense and, you know, you're kind of questioning some of the fundamental stuff that you went into. So anyways, with that, I will wrap it up. I hope you all are doing well. Hopefully, you're enjoying the weather. Hopefully, you are getting a chance to get outside. I apologize for the show being late. Yesterday, I was outside quite a bit. And if you were...

Brian Gracely (25:56.045)
watching me on video, if I had done this on video my eyes would have been basically swollen shut from from all the pollen that's out there. So I think we're right at the end of the pollen for North Carolina. Unfortunately it has lasted longer than it usually does and I think I read somewhere it is twice the levels that it normally is. So we're going through some stuff but hopefully we are we are toward the end of it and getting through it. Anyways with that thank you all for listening, thanks for telling a friend about the show, thanks for helping us grow the show, thanks for

A lot of the folks who have been sending us some really interesting feedback about some of the recent shows, we appreciate them as DMs or emails show at the cloudcast .net. You can find all

of our social media stuff in the bottom of the show notes that are published each week. So with that, I'll wrap it up and talk to you next week.