

EPISODE 812

[INTRODUCTION]

[00:00:00] JM: Haseeb Qureshi is an entrepreneur and investor. As a teenager, Haseeb played poker professionally through the online poker bubble. His path from poker to software entrepreneurship has been explored in previous episodes. In 2007, Haseeb and I met at an online poker table. As we battled each other for thousands of dollars, Haseeb and I realized we shared an affinity of obnoxious screen names, obnoxious online avatars and the city of Austin Texas. We were both living in Austin, and we met each other in the real-world.

In our earliest days, Haseeb and I were not friends. It was a strange time. We were disembodied minds drifting on the internet, attached mostly to the fluctuating balances of our full tilt poker and poker stars accounts. This was not a time for friendship. It was a time for ruthless modern online competition.

Throughout the history of poker, alliances have always been fickle, and online, backstabbing and deception was an art that had barely been explored. Any true friendship was a missed opportunity to exploit a competitor. The duplicity of the online poker world knew no limits, and our sheltered, posh existence of teenagers with great parents, food on the table every evening and no reason to worry about anything became shattered by the daily tumult of complete financial instability.

Online poker was in a bubble. In the early days of a bubble, success comes easy. You have to be a fool to fail. When a bubble pops, the ocean washes back to the sea and we see who's left without any clothing. The poker bust wiped me out, not just financially, but emotionally. In a month, I lost hundreds of thousands of dollars, but more importantly, I lost my identity.

After doing nothing but playing poker for years, what was I left with? What durable skills had I developed? What friends did I have to turn to? What was my ideology? What was my vision for my own future? As I plummeted into despair, Haseeb rose like a meteor through the world of heads-up puke, thriving on the rise in popularity of Pot-Limit Omaha, a game whose theoretical complexity suited Haseeb better than the rudimentary game of no limit hold 'em. The bigger the

stacks, the bigger the decision trees, and the bigger the decision trees, the more edge Haseeb had over his opponents.

As a poker player, regardless of whether you succeed or fail, the banality of what you are actually doing eventually catches up to you. The best players of poker are able to put an athletic framing on the game. Yes, you are competing on a zero-sum basis with a 52 card deck that was invented last century. Yes, your innovation is measured in the smallest increment. But in some ways, that is the beauty of the game. We don't need a revolution in the game of basketball, because to appreciate the dynamic of basketball is to appreciate the dynamic of humans, and the same can be said of poker.

Unfortunately, the success online poker player must eventually have their own reality shattered, because to be a successful poker player, you must be rigorous and critical. You will eventually be forced to step back and say, "What is this thing that I'm doing every day? How have I become hooked to a screen? I don't know how that screen works. What are these numbers? Are they fabricated? How do they control my emotions so thoroughly? Who is running this thing?"

Haseeb grew tired of poker. He wrote a book about the game to memorialize his thoughts and then abandoned it. He studied philosophy and literature, searching for something new in the historical musings of humanity. He traveled Europe working as a farmer to reconnect with the physical world. He discovered the effective altruism movement.

Finding no solace in his poker spoils, Haseeb gave away most of his money and started from scratch. As he rebuilt himself, he found software engineering and chartered a path to San Francisco, where he and I reconnected.

In this episode, Haseeb joins me for a discussion of software, philosophy, poker and the nature of bubbles. Haseeb and I spoke in-person at Cloudflare, and our conversation was centered on the nature of bubbles. Haseeb and I had lived through four major bubbles; the .com boom, poker, the 2008 financial crisis, and the crypto bubble. Throughout these bubbles, the mediums changed, but never does the message. Human beings are deeply irrational, tribalistic and emotional.

A few quick notes from Software Engineering Daily land, the FindCollabs \$5,000 hackathon ends this weekend. FindCollabs is the company that I'm working on, and if you want to enter into that hackathon, we've got plenty of time left for you to compete, and all you have to do is go to findcollabs.com and submit a project. That can be a software project, a project around cryptocurrencies, an art project, a music project. FindCollabs is a place to post your projects and meet collaborators.

Also, the new version of Software Daily, our app and ad-free subscription service is online at softwaredaily.com. We've got a FindCollabs going for Software Daily. We're looking for help with Android engineering, QA, machine learning and several more tasks. We'd love to get your help.

So you can find all those details in the show notes. Let's get on to this conversation with Haseeb.

[INTERVIEW]

[00:06:11] JM: So I want to kind of ease in to it by just thanking Haseeb, because Haseeb basically had this idea for the meet up for the conversation style. Our previous meet ups, if any of you attended them, were kind a person speaking, kind of the classic meet up style, person speaking, and then presenting some stuff, and the podcast, if anybody listens to Software Engineering Daily, is two people talking. So we wanted to bring that experience to the real-world.

So Haseeb's offhanded comment is responsible for this event today. Haseeb is very good at insightful offhand comments. So you're in for a treat. Also, one disclaimer, which apparently is important because I'm at Cloudflare, when we say crypto tonight, we're actually refereeing to cryptocurrency. Apparently, that's normally a gaff within Cloudflare. So we're going to commit a lot of gaffs.

Other thank yous. I want to thank you to Sudo shirt for the pizza tonight. That's S-U-D-O-S-H-I-R-T. It's a great place to get interesting tech shirts. Also, one other event I want to mention is our meet up, FindCollabs hackathon on Saturday. If you want to find out about that, you can go to softwareengineeringdaily.com/hackathon.

I think it's time to get into the conversation. So I want to give people some context for why Haseeb is a really important friend to me and just a very interesting person to me personally, and that's because I've known him for a very longtime, and he's actually come in and out of my life in a couple of ways. Actually, I met Haseeb when we were both poker players. We're playing online, and this is around the time we're both teenagers, and teenagers could play poker online back in the day. This is actually the first bubble that we're going to talk about. There was a bubble in the online poker world.

Haseeb and I were taking advantage of that bubble. Basically, if you remember this time when there was kind of the World Series Poker on TV and everybody is playing poker. All your friends are playing poker. Everybody is excited about poker. That was a very good time to play poker online. It was very easy. You just learn some basic strategies and then get quite good and make some decent money.

So Haseeb and I had both done that completely independently of each other, and many kids were doing that online. So I was also going to college at the time. So I was home for – I remember pretty distinctly, I was home for some break. I believe it was winter break and I was playing poker online. So that situation is me sitting at a laptop and playing a bunch of online poker tables all at the same time.

So I'm sitting at all these virtual tables playing for several thousand dollars at each table, and this guy, or this individual with this really obnoxious avatar sits down at a bunch of these tables. If you know anything about online poker, you play multiple tables at once. So we were both on like 6 or 7 tables together and I'm just like seeing this really obnoxious avatar. I think it was like a sun with a smiley face.

[00:11:09] HQ: That's right, yeah. It was a sun with a giant smiley face shining down on a flower. That was my avatar.

[00:11:16] JM: And his screen name is too crude to bring out.

[00:11:19] HQ: Yeah. I was 17 at the time. So it's okay.

[00:11:23] JM: Anyway, crude screen names aside. This poker player that I happened to be facing on 6 or 7 of my tables was extremely formidable, and I remember who is this person with the obnoxious avatar and the crude screen name who keeps taking pots from me. I hovered my mouse over – What was interesting about poker star is you hover your mouse over the other person’s avatar and you could see the location. It was kind of weird, but I saw they were in Austin. I was like, “Clearly, this person is as young – At least as young as me. He turned out he was two years younger. So it was a young person from Austin that happened to be at a bunch of my poker tables. That was a rare phenomenon. That was the only time I had actually ever seen that, somebody else in Austin who is a “regular”.

So Haseeb and I ended up meeting in-person, and this was when we were teenagers. Again, when we were poker players, and this is, by the way, long before we started programming at all. I didn’t know anything about computer science. I didn’t know anything about software. Haseeb was in the same boat. So we ended up meeting in person. At one point we were thinking about living together. Actually, we were going to live together. This was back, again, when we were both teenagers, and I flicked out. The reason I actually flicked out is because I had this really big losing streak at poker.

So when I had this big losing streak, I kind of decided – I took a step back and I was like, “This is really painful.” It was sort of like if you can imagine like a college athlete suffering an injury that kind of renders them immobile and unable to compete in the big leagues. It’s not exactly like that, but that’s kind of like how you feel when you go through these really big losing streaks, because you go from being able to play a really high stakes to being forced to the lower stakes.

Anyway, Haseeb and I didn’t live together, and he actually went on to just completely dominate poker. So he was one of the best heads up no limit poker players in the limit, which is saying a lot. He played for a lot of money, and it takes a certain amount of will and competency in order to do that. So I say all that as a preface to when we met each other in the software engineering world several years later after completely diverging paths. I’ve told that story sum on the podcast.

Anyway, if you want to know about Haseeb's story, he went to a coding boot camp and then he very quickly learned to program, and then eventually got into cryptocurrency investing after working at Airbnb for a while, and all these stuff is online. You can look it up, but he's a very interesting guy. We'll get into that.

[00:14:03] HQ: Well, the other side of the story is like sort of when we reconnected. I think you and I have really fallen out of touch. I don't think we got in touch with each other. I'd known kind of just peripherally through Facebook, whatever, that you worked at Amazon. You got a degree in computer science in UT. You were doing podcasting. I remember when I decided that I wanted to come work in tech, moved out to Silicon Valley, got a really s— apartment in San Francisco that cost like 850 a month for like a bunk bed that was like a really tiny room with another guy underneath me who's also going to App Academy.

Jeff was the only guy I knew who worked at a real legit tech company. I was like I remember a second or third week at App Academy, going outside, because there was no privacy in our dorm obviously. Going outside on – It was on 6th and Howard, like really s— street, like right next to a bunch of homeless. Pacing back and forth on the phone with Jeff, trying to figure out how do I get hired at a tech company? I don't know if I can do it. It's really, really hard.

I remember what Jeff told me, he told me, "All right, tech interviews are all bull—. Here's the thing. They're going to make you do stuff like reverse a string. Learn how to reverse a string, but like it's all bull—. Don't worry about it. You'll get a job. It's no problem," and I was like, "I don't know if this guy knows what he's talking about."

That was basically how I – It was actually a large part from your encouragement that I got the confidence to think that I could actually get a job at a legit tech company. Because when I first came out here, I mean, I had a degree in English and philosophy at a state school in Texas. I started my career as a professional poker player. Quit. Basically from 21 on, I had no career experience. I just looked on paper. My resume just looked like garbage to anybody who's in the tech industry. You're basically my only cheerleader for like the first year that I was in tech. I think that actually went a really long way toward make the progress that I have.

[00:16:04] JM: Yeah, first mover advantage. So I want this conversation to circle around the topic of bubbles, because you and I have now both experienced kind of two bubbles that have played some prominent role in our lives. The first of which was the poker bubble. Initially, poker was a place where you can make money very, very easily. Then I got increasingly hard. Eventually, possibly, I don't know the great details of this. But I think a robot can play poker better than a human at this point. So almost completely collapsed. Then the crypto bubble, cryptocurrency. So what are your reflections from these two bubbles? What are the similarities between the poker bubble and the crypto bubble?

[00:16:52] HQ: That is a very interesting question. The first thing I would say is that I don't think I agree that poker was a bubble. I think poker – How do you define a bubble? In my mind, a bubble is a situation where basically you have a massive growth in the price or value of an asset, where essentially what's going on is totally untethered from the real value of whatever asset is getting a bubble formed around.

The only way that the bubble can continue is by a next layer of people basically jumping in in this phenomenon, and everything that looks like that, every sort of inverted pyramid that has to keep growing and growing or just self-sustain eventually runs out of people. So I think what happened in poker was not so much a bubble as more like I'd say a wave, where essentially with Chris MoneyMaker and all the televised World Series of Poker stuff that ESPN, Flank Poker all the time [inaudible 00:17:47]. All that stuff, basically, [inaudible 00:17:50] big wave of people who came in to play poker together. It's true that like poker suddenly became this place where there was a lot of arbitrage possible. Despite being a relatively smart and disciplined person, you can make a lot money from people who are less smart and less disciplined with respect to the way they played poker. There are still people who are playing poker professionally.

Poker is always and forever is zero-sum game or a negative-sum game, because technically you're losing [inaudible 00:18:15] to the house. So on aggregate, people have to lose in poker for anything to make – For it to work. But always in that distribution of outcomes, there's some people who are making money and some people who are losing money. So there will always be people who can't be professional poker players, but I do agree with you that what happened in poker was seizing upon a moment in time when there was a relatively large amount of arbitrage in an efficient market that became more efficient.

So crypto I think [inaudible 00:18:41]. Definitely, what happened in 2017, 2018 was classic bubble behavior, where the behavior of the market, what people are doing with respect to the aspects that agreed to which they're valuing the assets become totally [inaudible 00:18:54] from their meaningful actual real-world evaluation. It basically becomes a game of musical chairs, where I'm fairly certain if I invest in this ICO, there will be a hundred more people who will come after me. As long as the music is playing, I can still dance and I can still make money. This is isomorphic to what happened in the .com bubble, to what happened in Toolmania, what happened in Basley. Every bubble you can look at in history has the same rough shape.

It's interesting that a lot of people actually in crypto, a lot of people who are in poker actually end up finding themselves in the crypto ball. I found it very curious when they first started getting into crypto of seeing a lot of the old faces that I once knew many years ago in poker and I was like, "Why is that?" I think part of it is that one thing that animates poker players is the instinct to find and take advantage of small edges. Especially for those small edges are at the periphery of what's socially acceptable, or if they're slightly subversive.

Poker players I think are kind of – They have a constitution that they're not afraid of going out and making money in ways that other people might find weird, or unconventional, or even unrespectable. So I think that's a part of it of what happened there. A part of the reason why I think like many of these other poker players, I was drawn to crypto, is not just because I see, which I do, the potential for technological disruption and the really interesting properties of crypto.

I think there's also some element of I like the fact that this is kind of dangerous. I like the fact that it's kind of weird and has the potential to really break things. I don't know, I think I thrive on that kind of environment, where things that are sort of a little bit too conventional, a little bit too well understood just don't excite me as much.

[SPONSOR MESSAGE]

[00:20:44] JM: When I talk to web developers about building and deploying websites, I keep hearing excitement about Netlify. Netlify is a modern way to build and manage fast modern

websites that run without the need for addressable web servers. Netlify is serverless. Netlify lets you deploy sites directly from git to a worldwide application delivery network for the fastest possible performance.

Netlify's built-in continuous deployment automatically builds and deploys your site, or your application, whenever you push to your git repository. You can even attach deploy previews to your pull requests and turn each branch into its own staging site. Use modern frontend tools and site generators, like React, and Gatsby, or Vue, and Nuxt.

For the backend, Netlify can automatically deploy AWS Lambda functions right alongside the rest of your code. Simply set up a folder and drop in your functions. Everything else is automatic, and there's so much more. There's automatic forms, identity management and tools to manage and transform large images and media.

Go to [Netlify.com/sedaily](https://netlify.com/sedaily) to learn more about Netlify and support Software Engineering Daily. It's a great way to deploy your newest application, or an old application. So go to netlify.com/sedaily and see what the Netlify team is building. Also, you can check out our episode that we did with the Netlify CEO and founder; Matt Billman. That was a really enjoyable episode. I'm happy to have Netlify as a supporter of Software Engineering Daily.

[INTERVIEW CONTINUED]

[00:22:38] JM: One thing you saw among engineers in that bubble period, the crypto bubble period about a little more than a year ago, was you wouldn't see just people who were captured by the crypto bubble. You also saw the inverse where people would say, "Cryptocurrency is nothing. This is garbage. Don't pay any attention to this crap. It's all a scam."

I mean, certainly, I did some podcast interviews with people who were very sophisticated scam artists. That's ultimately what it boil down to what they were doing. That facet did exist, but there is material technology there. What accounts for the psychological effect where some of us, some people in the engineering community, just rejected this technology entirely?

[00:23:30] HQ: So let me first preface my answer with saying that – Actually, it'd be interesting. I kind of want a get a read of the audience. How many people think that crypto is kind of bull—? Okay. How many people think blockchain is kind of bull—? Like no crypto necessarily or blockchain in general as like a thing. Okay. How many people are like crypto is so real. I'm on board.

Okay. Very [inaudible 00:23:52], which is actually pretty normal. So I'm very empathetic to the perspective of engineers who look at crypto and they're like, "This is just bull—. This doesn't do anything."

The reality is like – Especially being an investor now, the reality is the majority of the pictures that I see fall into the category of complete bull—. Basically, they're taking this kind of nebulous concept of blockchain of decentralized networks and they're appending it to something that like kind of somewhat makes sense or somewhat connects the real-world and out of it they get something that really just doesn't – If you sort of close your eyes and squint, like, "Okay, maybe there's a business there." But for the most part it's like, "No, this doesn't solve anything."

This is really the thing about I think any technological innovation, is that as soon as you get a new primitive, nobody really knows how it's going to get used. Nobody really knows what the eventual thing 10 years later that we look back and are like, "Oh, of course! The internet was used for anybody [inaudible 00:24:43] videos and upload them." Duh! That's what the internet was going to be used for.

We had no idea that that was going to be true. We thought it was going to be used then. We thought it was going to be pets.com, right? So I think it's normal for some degree to look at most of the things that are coming out and say, "This is almost certainly not going to happen. The world is almost certainly not going to change that way," and you are almost always going to be right when you make that claim about some potential use of an innovation.

I think the mistake to make is to assume that the entire category is not going to exist, as supposed to specific applications that people are suggesting are probably not going to work. You're always going to be right in predicting that specific applications are not going to work. But

your batting average in assuming that the entire category of innovation is not going to product anything valuable. At this point I feel like it's pretty rough.

So I'd say for crypto, most things that people say about crypto will turn out to be false, will turn out not to happen. I think a lot of people who feel like, "Well, blockchain is bull—," will feel very vindicated and they're like, "Yeah, I told you that wasn't going to happen." But there will be a very small number of things that I believe will be very successful. For those things, the properties of blockchain will actually matter.

For some of them, maybe blockchain won't. Maybe blockchain will be totally incidental to why they work. So I think it kind of depends on how you're making that assessment of blockchain being bull—, versus the category. A lot of people, if you press deeply enough they'll say, "Well, blockchain, technically, yes, if you use it the right way, if you use it for the right purposes and you really need decentralization. Yes, I see why it's valuable," but that isn't applied in 99% of the stuff out there, which I agree with.

[00:26:21] JM: In that bubble period, I fell victim to some of the hype, but in the sense that what you described is that poker player desire to go after those small edges, I saw how fast the market was going up. I have friends who were buying RaiBlocks. I don't know what RaiBlocks is, but they bought it and then made like 80 grand very quickly. Then this is not a rare story. All these kind of stuff happen, just like it did in the tech bubble.

This actually happens to us all the time as engineers, to a slightly lesser extent, or maybe to a much more opaque extent. We see technologies on Hacker News and it's like Futter. Flutter is the thing, right? Or like GraphQL. GraphQL is the thing. GraphQL kind of is the thing, or chat bots. Chat bots, there was kind of a chat bot bubble.

So as technologists, actually, whether or not we're making investments, like financially, we're making investments in terms of how we allocate our time to actually assessing and developing expertise in technologies. How can we develop a sensibility that allows us to evaluate technologies and make personal investments in terms of time or money?

[00:27:41] HQ: That's a really tricky question. I think that's sort of like the crux of what it is to be a good venture capitalist, is essentially to be able to make long-term predictions about how technologies would evolve and how it's going [inaudible 00:27:51] used in society to create more powerful businesses. As an engineer, I mean, it's very true. If you were somebody who you decided to go out, even though it was kind of unsexy at the time, just take your career 10 years ago on learning about neural nets.

10 years ago – I mean, the idea 10 years ago, it's still already [inaudible 00:28:09]. Let's say 15 years ago. That was like a very niche area of artificial intelligence research. But if you had made that investment, if you had just seen around that corner and know that AI and neural networks could become really important, you would become now head of AI at Google or whatever. You'd be really, really –

[00:28:26] JM: You'd win the Turing Award.

[00:28:26] HQ: Right. You'd win the Turing Award, whatever. So I think this is generally true, that if you make a high-risk bet with your career, you end up getting this sort of high-risk, high-reward situation, where if this technology becomes really important, great. You are now a world expert in this technology, because you've dedicated yourself to it.

On the other hand, if the technology fails or becomes like chat bots, then maybe it's going, "Okay. Now I'm king of an island that no one cares about," and that kind of sucks. So if you're like – I don't know, a world expert on XMPP, it's like, "Well, all right. Great. That's totally unemployable now. Congratulations."

I think to some degree that's kind of what I did myself with crypto, was I kind of decided that, "Look, this field is really, really interesting. I think it's the place where there's this small hidden edge that a smart motivated person can find, and I'm going to devote myself to it. Learn as much as I can about it and try to become an expert."

There was a massive crypto crash, and so maybe it kind of looks like, "Damn! Did I make the wrong career choice?" I think, for myself at least, the way that I see it is – Maybe a better way of answering this question will be like, "What would I do personally if crypto was just like totally

dead now?" If crypto is not dead, would people still write about crypto? You're also here because you guys know what's going on in crypto.

Let's imagine crypto just totally [inaudible 00:29:42]. No one is talking about crypto anymore. All the crypto companies go under. [inaudible 00:29:48] when you talk about crypto. It's all dead. I would probably have to be like, "Okay, I made a bet. It didn't payoff. What do I want to go do now? There's some point at which I say, "Look, I roll the dice. It didn't payoff. I go back to ideation."

But I think, generally speaking, the shape of the most successful careers, at least in my mind, or at least the ones I think are available to me, are ones that tend to look like a series of high-risk bets, one of which pays off. It's kind of the way that poker I think looks a lot of the time, is that – I mean, in poker, a lot of the times, you're trying to minimize the volatility of any particular bet you're making. In aggregate, you want to actually be pushing the threshold of taking the most optimal amount of risk at any given time. The most optimal amount of risk, there's a mathematical formulation for it called the Kelly criteria, which usually is riskier than you think you should be playing. I think this is generally true with people's careers. People tend to de-risk their careers a lot.

I think especially in Silicon Valley, which is like the least risky place to be an engineer in the world. The likelihood that you as an engineer will go hungry after betting on chat bots is just tremendously low. You can always go get a job just doing whatever it is you're doing before you started getting all into chat bots. So when the cost of failure is so low, you should just be making bets all the time and you should be making bets as aggressively as you can. To my mind, I think that's what I'll try to do in my career, and I'd say, "I don't know how you guess which one wins. I don't think I can imbue that into somebody's brain just magically by telling them some perspective. But I think if you have a lot of confidence as something will change the world, they'll make a bet on you.

[00:31:34] JM: A few other Haseeb factoids relevant to this. You studied philosophy.

[00:31:40] HQ: Yes.

[00:31:40] JM: And you actually wrote a book called *How To Be A Poker Player*, which is a philosophy of poker, and it's a fantastic book. It really is the convergence of poker and philosophy. So if you are at least a little bit interested in one of those categories, I recommend checking it out.

But what's interesting about is how it applies – It does apply more broadly, and what I wonder is you've had this trajectory of going to a boot camp and then very quickly finding great success. That's been something that other people have found to be like a role model kind of thing. I know a lot of people read your story online and they're like, "That's cool. That guy kind of transitioned from somewhere. He reinvented himself," and it seems to be able to navigate the software engineering world quite well.

I think a lot of people that are listening probably are early in their careers or may even be at a boot camp or maybe thinking about how to join a boot camp. So if you were to kind of write the book on how to be a software engineer, and there's people who are entering the world right now, they're just consuming all the information about software engineering that they can find, how would you condense that book?

[00:32:56] HQ: That's book. So I do have a couple blog posts that I've written about different parts of that journey, or at least kind of pattern matching on my own experiences. There's one that I wrote about how to get into a coding boot camp and then another one I wrote on kind of how to get a job, like you sort of get your first job offer in the tech industry.

But if I were to try to convince all that material down to a few sentences, probably what I'd say is – Probably the very first thing is figure out do you actually want to do this? They think it's very easy and tempting to make [inaudible 00:33:29] before actually knowing what you're going into. I think as much as there becomes this kind of weird [inaudible 00:33:34] weird mantra in Silicon Valley around anybody can code and whatever. The reality is like, yes, anybody can code, but not everybody should code, and a lot of people are going to have a very horrible time if they convince themselves that they need to be software engineers. When in reality, it's just something for which either is not pleasant for them. It doesn't click with their brains naturally, or it's just not the kind of thinking that they're especially good at.

So if you're somebody who like you're very, very good with your written word and you're very, very bad at thinking the way that computer thinks in a very analytical, rigorous way, don't try to force it, because you'll just end up really, really making yourself unhappy and probably wasting a lot of time and money. The first thing I'd say is like figure out whether it's for you and really seriously ask yourself that question. It's not to say that if it doesn't come naturally to you, you shouldn't do it. But it is to say that if it's not something you think would actually make you happy, definitely don't do it, because it's f— hard. I've seen many people go through the transition going from zero to software engineer. For every single one of them, it's really f— hard. It doesn't matter what their background is. It doesn't matter how much education they have. It's hard for every single person that I've ever seen.

So if you don't actually enjoy what you're doing, I just don't see how you can make it, because it's extremely intense. That's the first thing, is like figure out whether it's for you. If you know it's for you, then work your ass off, study really hard. Don't try to learn everything, because you're not going to be able to. Be comfortable with f— up.

Basically, I guess the last piece of advice that I think kind of goes under said is network matters more than you think it does, and that doesn't mean that you need to have a preexisting network, because I definitely didn't have a preexisting network. But it means that you should be cultivating that network the moment that you can, and every opportunity you get to build connections with people and relationships with people, especially if they're in the industry in some way, you should, because it will come back to pay itself over in spades.

This is true even in engineering, which is one of the most kind of technical object level fields you can think of. I mean, I remember when I first started as getting into programming, thinking like, "Well, for MBAs, I'm sure networking matters, but I know how to code, and that's the real thing that makes a difference in engineering," and that's just not true. It's only with the passage of time, the more and more I appreciate how deeply and true that is.

[00:35:49] JM: I want to have a couple crypto-oriented questions. It seems like maybe half the audience is less familiar with crypto. I'd like to get deep into it. In the crypto world, if you're not following it closely, there are these two giant communities, which is the Bitcoin community and the Ethereum community.

So these two communities are kind of, to some degree, like the Apple and Microsoft diversions. Kind of you hear about back in the day or maybe – I don't know, Google versus Facebook today. It's kind of a rivalry, a difference in philosophical opinion. How would you contrast and describe the Bitcoin community versus the Ethereum community?

[00:36:34] HQ: So when people say the Bitcoin community, usually they're referring to a relatively small cluster in the center who are often called the Bitcoin maximalists, and these people tend to be very, very ideological. They tend to be very old school. They've been on the Bitcoin train for like a decade, or 8, 7, 6 years, and they tend to be very – For the most part [inaudible 00:36:57] other blockchains or other innovations in blockchain as like from Bitcoin.

However, I think to call that the Bitcoin community I think is kind of just not correct. They're sort of like this very loud and very important group of people at the center of the Bitcoin community, but Bitcoin is so big and it's so global that like, obviously, the vast majority of people who are in Bitcoin are also people who are taking part in other communities, or there's people who are not that ideological about Bitcoin being the end-all be-all of crypto currencies.

But when you talk about the Bitcoin community, the norms are, at least to some large degree, set by the folks who are at the very center of that community. They tend to be very, very exclusive to Bitcoin. The Ethereum community on the other hand tends to be more collaborative. They tend to be more in the spirit of, "Hey, this is all a big experiment. This is sort of a world we're trying to s— out. We don't know if it's going to work. We have to keep iterating on it. It's a very hard science problem to figure out how to get these blockchains scale to the level we need to to be actually usable for realistic world-scale commerce or finance." So they tend to be more technologists, more kind of open in terms of the orientation of the community to know ideas.

In a sense, these are kind of caricatures, because, again, these communities are really f— big and there are so many people who are in both communities or at the margins of each community that it's kind of like saying, "What's France like?" I'm like, "Well, French are all like this." It's like, "Well, France is a big place." So I'd say like Bitcoin and Ethereum are also their

big places. So I think it's a little easy to kind of paint them with this big brush. But if I had to give you the canonical answer, that would kind of be it.

[00:38:28] JM: Since this is Software Engineering Daily and we're talking about Ethereum and Bitcoin, we've done some shows about this, but I really want your opinion. We're talking about the Ethereum and Bitcoin communities philosophically. When it comes to actual engineering problems, what are the main engineering problems of the respective communities right now?

[00:38:49] HQ: So for Bitcoin, that's a little bit tougher, because I'd say there are definitely a lot of folks in the Bitcoin community who see Bitcoin's primary feature or property to maintain as being as its immutability. Essentially being that Bitcoin is basically good enough and it doesn't really need to change.

So a lot of people would say, "Look, let's just maintain the chain as it's going forward." For the most part, it's done. It's fine. The most important developments to happen are on layer two. So layer two are sort of like these kind of – I guess like sort of emergent networks that you build on top of the main chains. So lightning network for example is one of these layer two networks for Bitcoin. I think a lot of people who are sort of very kind of in that Bitcoin maximalist sphere would often say, "Look, there are few things in the margin, like [inaudible 00:39:33] signatures or whatever that might bring some advantages to Bitcoin." But for the most part, it's good. It's done. Satoshi figured it out. We have it.

Now for Ethereum, that's a much, much larger question. Ethereum has tons of problems, and there's a lot of different avenues that we need to solve in order to fix them. So the first and foremost thing for Ethereum is that Ethereum actually wants to scale their layer one. So they're trying to move toward a new design of what they're calling Ethereum 2.0.

In Ethereum 2.0, they're going to be using proof of stake instead of proof of work. It's going to be sharded instead of being a single monolithic blockchain. There are going to be many different blockchains that talk to each other through an asynchronous messaging protocol, and all sorts of other stuff, like things like state [inaudible 00:40:13] and different virtual machine and blah-blah-blah. It's like Ethereum is just totally like going to reinvent itself over the next few years. I mean, I could go into more detail on what any of those specific things are. But for the

most part, that kind of gives you a glimpse of how different the kind of psychologies are between the two communities.

[00:40:32] JM: As a normal people, not thinking as engineers, we would like to have some of the benefits of cryptocurrencies. We just may not know it. We may not know today how these things are going to affect our lives. But what are some innovations that you see most likely to impact the regular human user? If I want to tell my mom why to be – Or my dad for that matter, why to be excited about cryptocurrency, what do you actually tell them?

[00:41:07] HQ: So my answer is that – My answer here is probably nothing. So I think it's unlikely that cryptocurrencies are going to be used by everybody in the world, or at least used by everybody to the same degree or to the same material impact to their lives. I think for the most part, if you're the kind of person who showed up in this room, you're kind of the person who like who lives in the first-call world, with a college degree and like a good amount of money and a well-paying job and in an economy that has a relatively – Basically, one of the most heard financial systems in the world, you're fine. You have everything you need. You have Venmo. You can get loans. You can get go margin long or whatever asset you want. You could buy the SMP. You can basically get exposure to any financial asset in the world as an American citizen. But this is not true pretty rapidly once you go outside the purview of wealthy cities in the U.S.

I think where you're going to see [inaudible 00:42:01] my answer is like your mom is probably not going to use crypto. If she does, it's going to be like sort of as the backend to another service that's totally abstracted from her and she never even knows that it can change, right? The extent that like, for example, J.P. Morgan might start selling their cross-exchange settlement, or not cross-exchange settlement, cross-account settlement through a blockchain.

But if you are, for example, a migrant worker in Thailand, or you are for example a wealthy individual in China who wants to get exposure to financial assets outside of the Chinese stock exchange, then there will no other game in town but crypto. Crypto is going to be a very powerful mechanism for a lot of different coordination problems to get solves. But also a lot of ways for individuals who want exposure to financial assets outside of what's prescribed within their particular jurisdiction to get exposed to a global financial system for the first time.

We kind of make noise as though our financial system is global, but it's really global. It's global in so far as the U.S. government has reach everywhere in the world. But it's not global and that anybody in the world has access to all the infrastructure that everybody else has access to. It's very untrue. There's massively unequal access to financial infrastructure around the world, and there are some places where, for example – One example I like to [inaudible 00:43:17] is that in Thailand, there are a lot migrant workers in Thailand, and in order to get a bank account in Thailand, you need the equivalent of about \$500 U.S., which to a migrant worker is worth about half a year's salary. How many people in the U.S. do you think have a year's salary in savings? It's a tiny load. That's basically what the – If you are in that situation in Thailand, you can only exist in the cash –

[00:43:43] JM: [inaudible 00:43:43] why does crypto solve something? Why does crypto solve that problem of not being able to open a bank account then?

[00:43:51] HQ: The answer is that, basically, what crypto does is it allows you access to this uncensorable, decentralized system, where people can build one set of financial services that service the entire world. That was really not possible even with just the internet on its own, because the internet was always under the control of the particular party that was running the server. That party ultimately was out of the jurisdiction of the United States, which has its own incentives, its own laws, its own restrictions on the transfer of money and value and whatever.

Cryptocurrencies have become this way for people to decide on – Or people to bring on a value accruing system that nobody owns and is accessible everyone in the world. That's actually new. That has actually never happened before, except in so far as we all agree that like gold is nothing. Gold is not digital. There are digital markets on which buy and sell gold, but they're not available in the world. If you don't have access to gold, [inaudible 00:44:48].

Crypto is really the first place where that has happened. I would guess that the people who'll be most disrupted by what happens in crypto are not going to be us. I think as – This is kind of one of the many biases of Silicon Valley is that it has a very hard time wrapping its head around things that don't apply to basically upper middle class folks in California, but this is exactly the place where crypto is probably not going to matter and other places in the world who are not here, they get crypto almost immediately when they see what it's capable of.

[00:45:22] JM: Now, as Silicon Valley [inaudible 00:45:24], the thing that really is just destroying my life is that really good ads are getting to served to me, and this really good ads are only possible by the what is sometimes called – What is this? Surveillance capitalism? This is the term that people use when they're criticizing Facebook, and Google, and Amazon. These companies that are collecting your data, the data that's passively accumulating, the data that you're explicitly giving to these companies.

There are some theories that not only will crypto enable this financial system, but it will potentially undermine, or even further, is needed to undermine these services that have become so interwoven with our lives. To what extent do you buy in to that kind of decentralization, decentralized to undermine Google belief set?

[00:46:33] HQ: Almost not at all. So I think this is, again, what are the things that I think happens a lot in crypto is like kind of – Sort of like electrical interference, where crypto is like this big, weird, noisy thing, and like all the anger at Facebook and Google is this, big, weird, noisy things. They must connect somehow. I think the reality if that –

[00:46:53] JM: They also connect to GraphQL.

[00:46:55] HQ: It also connects to GraphQL. Everything else that people are angry about or – I don't know, surveillance capitalism in Russia, blah-blah-blah. [inaudible 00:47:01]. I think for the most part, there was kind of this story, and it's still alive in crypto, but it's a little bit less strong than it was last year around what they call Web 3. The idea is like, "Okay, Web 1 is like [inaudible 00:47:15] and email and whatever. Web 2 is big interactive thing, where like Facebook like button, isn't that amazing, and you can share it with your friends."

Then the idea is like, "Okay, Web 3 is the decentralized web." That's the web where literally nobody owns it. It's not run by any particular server. It's all global infrastructure. Everything is transparent and there's no more capture by particular companies of your data. The data is now open and it's self-sovereign, blah-blah-blah. That's the Web 3 story.

So I am amazingly skeptical over this story for a few important reasons. One is that I think the reality is why do people use Facebook and Google and blah-blah-blah? The answer is that because – You have two answers to that question. One answer is that people don't realize what they're giving away with all their data when they consume these services for free. The [inaudible 00:48:03] question is that people don't give a s— about their data. The people who give a s— about giving away their data are New York Times columnists and people who are on soapboxes. For the most part, they all use Gmail. They all use Google.

Yes, they all use these services, because they're all willing individually to make the tradeoff. Now you might say, "Look, aren't we in this globally suboptimal equilibrium. Wouldn't it be better if we all pick, like we all sign a contract together and became blog brothers and sisters and just like, "Look, we're all, tomorrow, going to shut off Google and go DuckDuckGo or whatever, and like let's all do that. Let's all just agree that that's going to happen tomorrow."

Yes, in that hypothetical world, maybe everybody else is happy and Google sad in that world. But that is not going to happen. The only way that that – There's like a picking up and moving of an equilibrium like that, is if the incentives radically change. This is a classic [inaudible 00:48:53] game theory stuff. No, blockchain doesn't change that. What the f— is a blockchain going to do about the fact that Google is a way better search engine than any other search engine in the world? What does blockchain have anything to do with that?

[00:49:05] JM: Crowdsourcing.

[00:49:08] HQ: Look, DuckDuckGo is trying their f— best. Bing is trying to best. They're not even – They collect data on you and they still suck. The reality is these services are really, really good, but you pay for them with your data. People aren't happy about that. Blockchain is kind of orthogonal. To my mind, there are some things that gets solved through decentralization. Social networks are not one of them. Search engines are not one of them. If you want to see something that gets particularly disrupted by crypto, it's probably something for which, "Man! The only reason that this is not working is because we didn't have a coordination mechanism, but now we do."

I don't think the problem with Facebook or Google is that people don't have coordination mechanisms. I think the problem is that they are really good products and it's harder to build better ones. To be clear, they do have great network effects, but that's part of the value proposition of the problems. So unless we can build a product that has a better value proposition, it doesn't matter whether it's decentralized or you own your own data or whatever. If there's anything we've learned over the last couple of years of the New York Times and other mainstream media just beating up on these social networks is that consumers don't care. They vote with the wallets and they still stay on Facebook.

Facebook's stock was actually up after New York Times did all their nonstop exposes on them, and they only went down when they said, "Look, we're going to stop serving as many ads, because people aren't using Facebook as much, because people are going to Instagram," which is by the way the same ad network. So that's my very longwinded kind of angry answer.

[SPONSOR MESSAGE]

[00:49:08] JM: Testing a mobile app is not easy. I know this from experience working on the SEDaily mobile application. We have an iOS client and an Android client and we get bug reports all the time from users that are on operating systems that we did not test. People have old iPhones. There are a thousand different versions of Android. With such a fragmented ecosystem, it's easy for a bug to occur in a system that you didn't test.

Bitbar is a platform for mobile app testing. If you've struggled to get to continuous delivery in your mobile application, check out bitbar.com/sedaily and get a free month of mobile app testing. Bitbar tests your app on real devices, no emulators, no virtual environments. Bitbar has real Android and iOS devices, and the Bitbar testing tools integrate with Jenkins, Travis CI and other continuous integration tools.

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You can check out bitbar.com/sedaily to get that free month and to support Software Engineering Daily.

[INTERVIEW CONTINUED]

[00:52:55] JM: There's a growing sentiment among engineers – Again, at least engineers that are talking to certain newspaper that were engineers and were fed up making addictive technology for these companies, and we're fed up making facial recognition technology. It's time that we developed a true ethos for engineering, and it's time that we boycott these companies and stop delivering dopamine hits to people at uneven slot machine like frequencies.

As somebody who played poker from a very young age, I will say there's a certain advantage to having to overcome the urge to go and play the slot machine all the time. I would say I definitely benefited from the fact that I really dealt with some severe, and not actually addiction issues, but sort of like you feel the threat of addiction. As a poker player, you absolutely feel the threat of addiction, if not deal with it on a firsthand basis.

By the way, we sort of cope with this. We were sort of the early – I don't know, early adapters of technology addiction dopamine rushes. Same kind of stuff that you see addicting people, the World of Warcraft, and it's just to your smartphone. You can take that as a bundle of things –

[00:54:22] HQ: Yeah. Let me kind of go through some of those things [inaudible 00:54:24]. I don't want to portray myself as saying that I don't think you should boycott Google or Facebook. If you want to boycott Google and Facebook, I encourage that. It's awesome. Go do it. Vote with your wallet. Vote with your attention. Vote with your usage of these products.

I think voting with like social media signaling, which is I think what a lot of people are doing. They're literally on Facebook saying how bad Facebook is or on Twitter saying about social

media. To be clear, I very much intentionally limit my use to social media. I have like an extension that literally blocks my Facebook feed. So I have no Facebook feed. I never go to my algorithmic feed on Twitter. I basically try to avoid – I don't have [inaudible 00:55:04], and I try to avoid any algorithmic feeds in my life generally, because I think they're just basically bad for your brain and your attention span.

Kind of riffle a bit on what you were saying about poker, so I'm actually some of the opposite where like I never – I was not addicted to gambling, and I know a lot of people who are professional poker players who's sort of like a way for them to manage this beast of their gambling addiction, but in a roughly productive way. That was not the case for me. I just have no attraction whatsoever to slot machines. They sound stupid and kind of moronic to me to spend your time just losing expected value by pulling no a thing.

I mean, it's not to say like I never gambled. I certainly did, but it wasn't a thing that I was drawn to. But I do think – For people who say, "Look, this is stuff is addictive and this stuff is bad for you," I totally agree. To some extent, like I am also voting my wallet on that. I think in the future, we will look back on the attitude we had towards social media and toward a lot of these applications generally as being like as bad or as stupid as the obesity of [inaudible 00:56:08]. Where we're sort of like, "Look, yeah, it's totally fine. The free market can just invent more and more kinds of candy and soft drinks and normalize drinking Coke in every single meal. What's wrong with that? What can happen?" It turns out, society just starts getting more and more f— as people just get more and more obese and nobody can really figure out what's going on. I think eventually we're going to see the same thing happen with these applications on our smartphones just because we never had any relationship with an object quite as intense as the relationships that people have with their phones. I think that's true for me as well even though I try to be conscious about it. I know that I am addicted to my phone, and I'm pretty sure everybody in here has some degree, if not physical, but psychological addition to your phone, especially if you're in Silicon Valley.

I think it's important to be mindful of these things. It's important to kind of engineer your own lives that you make the best of this situation that you're in. I don't think the answer is being a total [inaudible 00:57:00]. I don't think the answer is just embracing everything mindlessly. To my mind it's like, yes, these things are addicting. You have to probably engage with them. I should

be on Twitter, because I think that's where important conversations are happening, especially in the crypto and investing world. But I try to moderate my usage of it. So it's kind of like, "Look, the addiction to food is bad. You should still eat food though," but don't like buy 10 tons of ice cream and just be like, "Look, I'm never going to look at them. So it's fine." Be smart about it. Engineer your life around making yourself make good choices.

[00:57:31] JM: So people who haven't followed your career. So after you graduated a boot camp, you worked at a boot camp for a while and then you joined Airbnb, worked as an engineer there for about a year and a half or something like that. Then you became kind of a cryptocurrency expert. You were thinking about what to do as a cryptocurrency expert, and you wound up in crypto VC basically, crypto investment.

I think you developed kind of a knowledge of how the VC world works more broadly. In what ways does venture capital resemble poker?

[00:58:09] HQ: The ways in which it resembles poker is that, one, it's an area where you need to be thoughtful about risks. So you're going to be willing to take intelligent risks. You need to be good at kind of emotionally separating yourself from your decision making. Not feeling excessively bad when something you do goes wrong, or not feeling like insanely good when something you do goes right, but like moderating those peaks and drops that I think naturally people tend to feel.

I would honestly say for the most part, there aren't that many similarities between venture capital and poker. A lot of people have kind of post the question to me like, "Oh, poker must have made you really, really good at investing." It's like, "Not really. Most poker players I know are charitable investors." I think poker players tend to make traders, because trading is very much about short-term decision making and very enclosed analytical little problems that you have to decide, "Look, when do I get in? When do I get out?" We get very quick feedback cycles, and it's extremely mathematical and analytical.

Whereas investing, especially investing in companies, tends to have a much longer time horizon. You get feedback very, very slowly. There's much more non-quantitative inputs into

your decision making, and it's much more about integrating lots of little pieces of information as supposed to rigorously analyzing a kind of fixed set of data.

I think those skills don't overlap with poker very much, I would say. I think in a way it's like philosophy kind of handles that better, where philosophy kind of trains you to like think very holistically and bring in a lot of different inputs and think very clearly about problems under a lot of uncertainty. So I kind of think like being philosophically minded actually probably selects better for people who are good investors. I could be totally wrong about that. That's like my gut feeling.

[00:59:57] JM: Crypto investing specifically, if I want to be a crypto investor – Let me put this another way. I'll put it in the Peter Thiel question asking phrasing. What do you believe about crypto investing that is true that all other crypto investors, or most other crypto investors disbelieve?

[01:00:23] HQ: That's a very good question. I guess the answers I can think of are pretty niche. Do you want me to give a niche answer or do you want to give like a broad answer? [inaudible 01:00:32] specific things that I think won't happen that most people can grow.

[01:00:36] JM: Maybe we should broaden this. How do you invest intelligently as "crypto investor"?

[01:00:45] HQ: How do you invest intelligently? So I guess the first thing I would say is that, and true in any kind of investing, is that if you are any kind of halfway decent investor, you'll say a lot more nos than you'll say yeses. If you're not finding you're doing that, you're doing something very wrong. The first thing is that like 90%+ of things are not good investments. The second thing I would say is that you have to – I think a lot of people, especially in a field like crypto, which is so weird and like kind of has so many moving parts to it. It's changing so rapidly. The kind of what their common sense go out the window sometimes. They kind of sort of assume, they're like, "Well, but this is a new world, and crypto and Web 3 and decentralized future, and who knows what's possible? Maybe we will all be buying coffee through whatever, through Bitcoin on lightning network and blah-blah-blah."

I think just stopping to try to really rigorously ask yourself skeptical questions about, “Okay, what would go wrong for this thing not to come true?” or what would have to go right for this thing to come true? I think really kind of connecting that causal chain of how the world changes as supposed to like, “First there’s A, then there’s B,” and like, “Yeah, b kind of makes sense. I can see the story in my head, so I’m go ahead and invest.”

I generally tell a lot of people in crypto trying to invest of just kind of like, “Yeah, that sounds roughly plausible as like a possible future,” without really thinking about, “Okay. First, A has to happen, then B has to happen, then C has to happen, then D has to not happen,” and that’s how –

[01:02:08] JM: So it’s not like I’m betting on the founder.

[01:02:10] HQ: Right, yeah. I think that’s just like the wrong way to think about, because a crypto investing is ultimately investing in early stage experimental technology. It’s not like investing in just like random startups. To that end, I think the product, the technologies [inaudible 01:02:24] problem trying to solve really actually matters. So I think if you’re making bets in crypto purely based on, “This is a smart founder,” you’re going to make a lot of really terrible events, because there are a lot of really smart people in crypto who have no idea what they’re doing. That’s kind of a function and large part of what happened last year, is that – And you can kind of see, it’s just supply and demand, right? The value to an entrepreneur of coming into crypto and building something and being able to raise a s— load of money and get really quick liquidity brought a lot of really smart people into crypto. Naturally, that just means that a lot of those people are going to be very, very capable entrepreneurs, but have no idea how to build good crypto promise, or not have any real insight into what the world needs through some kind of crypto network. So that would make me say that be really f— skeptical if you want to be a good investor.

[01:03:15] JM: One last question and then we’ll kind of open it up for audience questions, and I’m really looking forward to hearing form the audience. You’ve reinvented yourself a number of times. So you’ve gone from – First were into poker. After, I think you’re very interested in physics. Then from poker, you went into software engineering, software engineering into crypto. Do you have like a recipe for self-reinvention, or put it another way, do you think people are too

hesitant to sort of reinvent themselves? I think people get stuck in a rut. I feel like people get stuck in a rut, for example, I'm a Cobol developer. I've been a Cobol developer for 20 years. I'm only looking for Cobol contracts, and that's all I'll ever be. I want Cobol all written on my grave.

There are some people, that's totally fine. But I think people don't – I think people may over estimate how difficult it is to reinvent yourself. Sometimes it's perhaps not as hard as it looks. What are your lessons about reinvention that you think the average software engineer should know?

[01:04:22] HQ: That's a funny question, because I don't think I've ever had a moment in my life where I was like, "I should reinvent myself." I don't think it's ever been like, "Huh! This is not working out. I should become a new person." It's more just like you just sort of cheap kind of step by step going through life and making good locally optimal decisions and you end up finding yourself having taken a really weird path to get you where you are.

I feel like what I would say to somebody who's thinking about reinventing themselves or is afraid of reinventing themselves is that like –

[01:04:54] JM: Hold on. Going from poker to software engineering is not like an obvious local optima.

[01:05:03] HQ: That's true. Yes, because that's like [inaudible 01:05:06] I guess the one sentence compression function over what I actually did. What actually –

[01:05:11] JM: So tell me what goes on in that – Un-compress that, please.

[01:05:14] HQ: Un-compress that. So I mean, long story short, basically I was like, "Okay, I was a poker player. I'm done with that now. I want to do something else." It wasn't like I want to reinvent myself. It's like I want to do something else. So I was looking at various things that I thought I could do, and one of the things that I – Actually, now that I think about it, here's maybe the one example of a time that I thought, "Okay, I'm going to reinvent myself."

At one point, I decided after poker I wasn't really sure what I wanted to do with my career. I run into this movement Effective Altruism, which advocates going to a high earning career and donating a lot of your income to charity. So I thought, "Okay, I should go –" I was convinced by this and I thought, "Okay, I should go pursue a high earning career donating on my charity." I thought the best way to get a high earning career would be to go get an MBA, because if you get an MBA, then that's like kind of the one thing where it's like, "I can't go work directly in the tech industry. I can't go join a law firm." I can't do any of those things. But if you get an MBA, that's kind of like the one way to sort of wash the stank of you of like whatever weird thing you were doing before the MBA. It's now like you're just like a fresh, clean [inaudible 01:06:16].

[01:06:18] JM: And now the MBA is the stick itself.

[01:06:19] HQ: Exactly, but that's like before reinvention. So I thought, "I should go get an MBA." What ended up happening was I had – At the time I was doing mental coaching, and one of my mental coaching clients was a senior director of PayPal, and she was starting a startup. She told me, "Hey, instead of going to get an MBA, why don't you come join my random startup?" I knew nothing about startups at this time. I have no frame of reference. Didn't read anything about it when I'm at Silicon Valley. This was like a MCAT training video startup. Just like now [inaudible 01:06:51] why would I do that? But I was like, "That sounds amazing and that sounds like a very plausible outstanding business. Totally." Totally. I don't see why that can't on the world.

So I was like, "Cool, I want to join your startup. What should I do?" She's like, "Okay, we need somebody to do marketing." I was like, "Well, I don't know the first f— thing about marketing, but I guess I could learn," and he was like a few months away from funding. So I went and try to learn everything I could about marketing, and it turned out that there were all these articles. This is like 2014. In 2014, the big buzz word in Silicon Valley was growth app.

So I was like, "Okay, I need to become a growth hacker." Everything I read about growth hacker said, "Growth hackers need to be able to code." So I started learning teaching myself how to code. The more I started coding, the more I realized like, "Hey, I'm really enjoying coding. I'm picking it up really quickly, and I f— hate marketing."

So I had this epiphany that maybe if I learn how to code as fast as I could, before these guys got funding and this guy [inaudible 01:07:45] this company, I could learn to be a developer and then get on my knees and beg them to take them on as developer and build the product instead of being a marketer. That was my master plan. So I applied to every single boot camp in the Bay Area, moved out here, went to App Academy, blah-blah-blah.

The punch line of the story is that the guy never left his job, never started a company, which probably was my choice, and I ended up hired by App Academy and taking a totally different route. It was not as some master plan for me to go in the tech industry. It was just always me sort of making what I thought were sort of locally optimal decisions given what was in front of me.

[01:08:21] JM: Now, when you're playing poker, one thing you learn, you start to see the decision tree unfold way ahead of when it actually unfolds. So you say like, "Okay, I got these two cards. Here is the spectrum of ways that that could unfold. If it goes in each of directions, here's the spectrum of ways that that could unfold." You sort of learn to like parse these different decision trees. You learn like, "Okay, this area of the decision tree is never going to happen. This one's more likely to happen. This one is higher upside. So I should actually think through that decision tree a little bit further."

I think that parsing that decision tree, at least for me personally, parsing the decision tree that's weighed in terms of expected value, or the Markov chain, whatever you want to call it. So that is quite valuable as a broad career strategy. Is there any way that we can better at developing those decision trees, or is that something that you need to play poker to develop?

[01:09:22] HQ: You definitely don't need to play poker to develop that skill. I would agree with you that I think that is one of the things that I am good at and that inherited from my time as a poker player. If I had to really encapsulate it, I'd say just like thinking strategically about your career in such a way that you leave your emotions out of your thinking. That sounds kind of cold or calculating, but I think what I mean by that is that it's very easy – Here's kind of another way to get at the same thing I'm trying to say, is every single point in my life, every single career pivot that I've made in my life, I felt like a fraud. I felt like I don't know enough, I'm not really good enough at this. I don't really know what I'm doing. I've only been doing this for X amount of

time. Am I just fooling people? Am I fooling myself? It's f— scary to go and do something new especially something you're not good at and to leave behind the thing that you are already good at.

To some degree, that was a decision I made when I left poker, because I was a profitable poker player. I can make probably a lot more money playing poker at that time than I could doing anything else even conceivably. But it's that willingness to say, "Look, I know this is the right decision for me even though I will feel scared, even though I will feel like an imposter, even though I will feel uncertain about myself all the f— time. I'm going to do it anyway."

I think making that decision is really hard for most people. Being a poker player kind of trains you over the years of doing that kind of thing. It never makes it easy, but it makes it doable. But I don't think that's the only way to get there. I think the way that you ultimately become better at that sort of thing is just doing. Is just making it a part of your life and your identity that you're somebody who makes hard choices and puts yourself in difficult circumstances.

I think the other aspect of it that I guess I would say is something that I don't think I learned from poker, but I really learned myself, is in a way just having faith in myself that I'll figure it out, that I'm resourceful. That like even though I'll be scared, even though I'll be f— angry and I'll be staying up late at night, I won't be able to get sleep and it will be enormously challenging when I get there. But just like locking myself in the room and throwing away the key. That is an enormously valuable skill in life, because I don't think it's that like – I know that I'm a coward. I know that when actually faced with the alternative in front of me of like the easy thing and the hard thing, I'll choose the easy thing every single time.

So what I do is I engineer myself in such a way that I don't have a f— choice, that I can't choose easy things. That in my moment of bravery I can say, "Great, I can't do the easy thing anymore. The key is in the garbage and I'm already on the boat going to the new highland. I guess I'm going to have to figure it out." That skill I think is something that is – I found it to be very, very rare with people and that's something I think has propelled me in my career.

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[INTERVIEW CONTINUED]

[01:14:01] JM: Let's do some audience questions. So, all right. We have Mike.

[01:14:12] M: [inaudible 01:14:14].

[01:14:29] HQ: You're talking about specifically –

[01:14:31] JM: I'm going to repeat every question so it gets [inaudible 01:14:31]. He's saying we are going to have some [inaudible 01:14:37] to decentralized technologies. Why is that not going to kind of [inaudible 01:14:42] Google, etc.?

[01:14:43] M: No. It's bringing up the issue of algorithmic [inaudible 01:14:48] huge issue that we're going to look back on. Why isn't that [inaudible 01:14:53].

[01:14:56] JM: Oh, okay! So we're going to have this shift towards crypto. Why isn't that going to allow [inaudible 01:15:04] of the kinds of things that result [inaudible 01:15:07].

[01:15:12] HQ: So it sounds what you're implying is that, basically – Eventually, we're all going to recognize, where like society I think at large will recognize that – I think people will largely recognize that the ways in which we're using Google and Facebook and all these sort of algorithmic feed type products is ultimately bad for the human psyche. So the question is like why won't this accelerate an adaption of crypto?

I think the answer is that like the way you solve that problem – The solution to that problem is not necessarily crypto. The solution to that problem is like stop using algorithmic feeds, or stop using things that basically gamify your emotions or your attention. You don't need crypto for that. You just need products that basically turn the noise level down a few decibels. Crypto is one way to implement that, but it's by no means the only way to implement that. If anything, it's like in a way a harder way to implement that than just doing it in a normal centralized server and just normal web app.

I think, generally speaking, the applications of the form like, "Well, you could do this with crypto," are not good things to expect crypto to end up winning. The place where crypto is probably going to win is places where you would say, "You cannot do this [inaudible 01:16:19] for crypto." What are applications that look like that, that have that shape? Those are the place where crypto is likely to win. Otherwise, always and forever, centralized services are going to be easier to run, easier to create and cheaper to operate than crypto knows.

So if you can have a centralized version of it, you should expect there are probably two be a centralized version of it. Even with an algorithmic feed, I imagine if there are some kind of massive governmental backlash against social media products that probably there would like very onerous regulations around how often you can surface popups and show people numbers and likes, and I don't know, something along these lines. You can imagine [inaudible 01:16:55]

and smarter ways of doing this kind of regulation. I think it would all still live in centralized server land.

[01:17:02] Q: [inaudible 01:17:02]

[01:17:34] JM: The question was how do you engineer your life to just take risk [inaudible 01:17:40]?

[01:17:44] HQ: Yeah, very good question. So things that come to mind right now kind of just like wrestling through choice I think I made in my life. So one is making big public commitments I think is something that people don't really do enough, and I do a lot. It's sort of like a default thing for me that's like – Here's a very simple micro example, is I was at a blockchain conference, and blockchain conferences, if you guys have never been to one, they're very exhausting, because it's just nonstop stuff and I tend to prefer ones that have a lot of academic research content, and those are even tougher to get through a lot of times because there's no razzle-dazzle, it's like very dry, very hard to get through.

But a lot of times I go to those things, it's like, "I want to learn. I know there's a lot that I don't know at cutting edge of cryptography and distributed systems and stuff like that." So what I have done several times now when I go to a conference is I tweet out, like on day one of the conference, I'm going to live Tweet notes for like the majority of talks that I see today.

It turns out it really sucks to do that. It's not fun. It's very unpleasant. Every time I do that I'm like, "What the f— did I do this?" Because instead of just like hanging back and falling asleep and checking my phone and being utterly bored and [inaudible 01:18:59], which a lot of times I am. Instead I'm trying to understand what they're saying and writing it down and summarizing it and tweeting it, which is very tiring. But I do that because I know it will level me up, and I know if I don't do that, I'm going to do the easy option of just like kind of sitting around for a couple of talks, zoning out and then like checking my phone and going out and hanging out in the break room or whatever.

So there's sort of a lot of little things like that, but even bigger things of just like telling people like, "Hey! I'm going to go read this book, and then I'm going to tell you what I think about it."

The more public commitments that you make that you know people are going to hold you to – I think what are the most powerful motivators for any human being is just embarrassing and it's a feeling like you're full of s— and having the people around you see you that way. If you have a reputation that you feel is worth protecting, one of the most powerful things you can do with it is to motivate yourself.

[01:19:58] Q: Quitting a job.

[01:20:03] JM: She said leaving a job.

[01:20:04] HQ: Leaving a job. Yeah.

[01:20:05] Q: [inaudible 01:20:05].

[01:20:06] HQ: That I think is another good example, right? So like I think a lot of people have lots of trouble leaving their job, and the more strongly you make that commitment, that I'm going to leave on X-date regardless of what happens, and I will just like engineer everything else around that hard constraint, because I've committed to my partner, or my boss, or other people around me or whatever in some kind of public way. That, I think again, is like a very powerful forcing function that just make you have it.

[01:20:34] JM: By the way, that's what I did for Software Engineering Daily, and I just had a faith that I would be able to find enough podcast advertisers that would pay me enough money to pay for rent, and it worked. I mean, could have gone terribly. I capped the downside. I said, "Okay, I've got this much money in the bank. This is going to last me for four months. I think I can find advertisers within three months." I found them within one month, because my back was against the wall. There's a lot of value to putting your back against the wall, especially when you live in America. So if you live in America and you're a U.S. citizen, your back is not really against the wall if you have good health –

[01:21:11] HQ: To be fair, there are – For many people, you have other hard constraints that makes it harder to take risks. Risk is a continuum. Not everybody can take the same amount of risk. That said, I would guess that everybody in this room given that you're all software

engineers and you live in the Bay Area, probably underweight how much risk you can safely take in your life.

The amount of stuff that would have to go wrong for things to actually be bad in your life is way larger than you probably think it is. For that reason, I'm not concerned about any of you guys going out and being really reckless with yourselves, because the chance that you are too risky is just astronomically low. So, yeah, I would say like however risk you think is too risky, be slightly more risky than that, and that's probably the right amount.

[01:21:57] Q: Going back to the discussion of risk [inaudible 01:21:59].

[01:22:49] JM: Real learning versus fake learning.

[01:22:51] HQ: So what does fake learning look like? I think the properties of fake learning, I would guess, are doing the same thing in the same context without getting any meaningful feedback. Not being on the – Basically doing things that are easy for you are probably situations where you're not really learning. I guess I would say just not being very mindful of what you're doing. For the most part when you're just kind of unconsciously going about anything in your life, you're not really learning.

So kind of by just inverting that set of principles that you can arrive at what it means to do real learning and how to make a learning environment more palatable to stronger learning. One is make sure you're getting tight feedback loops. No matter how tight your feedback loops are, try to make them [inaudible 01:23:36]. Try to make them faster. Try to make them closer to the thing you're doing.

If you can get feedback on your code the moment you're writing it, that's better than getting it a day later. It's better than getting it a week later and it's way better than getting it a year later. So that's one of the reasons why things like pair programming, or why things like working directly writing code with somebody who you see as a mentor or somebody to give you feedback. It's so powerful for learning, is because the feedback loop is tighter than almost anything else. That's one thing that I think a lot of people don't think very deeply about is how tight can I make the feedback loop in this thing that I'm doing? I think being mindful I think is kind of generally, yes,

we need to be paying attention in order to things really well. Always being on the threshold of discomfort.

So this is one thing that I think a lot of people don't really do very well is that they basically – They get to a level where they're okay and then they just like stay okay. They basically don't try to do harder and harder things. The only way that people become world-class at anything is by continually staying at this threshold of just hard enough that I can barely do it. But I'm not that good at it, right? Continually pushing yourself in that direction of things that give you a mild amount of discomfort but that you can ultimately accomplish. You want to stay in that band for as long as possible to write your development. So that's I think one thing that people really get wrong a lot of the time is that they get to a level of competent and then they just basically stay there and then their jobs are easy. If your job is easy, you're not learning enough.

[01:25:03] Q: [inaudible 01:25:03].

[01:25:21] JM: How do you approach effective altruism and how does altruism affect your life?

[01:25:26] HQ: Sure. I'll start with the first part of that question. So in terms of causes that I donate to, I think there are a lot of different ways to think rigorously about which cause area you want to donate your money to. I tend to think that in the world where we live in today, one of the most underappreciated risks in kind of facing humanity for the next several decades is going to be the risk of AI development, AI developing faster than we know how to safely use and control it.

I think there are more dramatic and less dramatic versions of this, but I think the simplest way to state it in my mind is that so much of our society, in our world, in our infrastructure, is going to be running on artificial intelligences. We are kind of building this stuff faster than we really understand how it works. Right now, for things like SEO, or things like serving ads, that's okay. It's all right to be having a black box kind of running fairly niche parts of our financial or economic infrastructure. But when it's running more and more parts of society and making larger and larger decisions that relate to warfare, or things like biochemical components of drugs and just things that are very, very difficult to really understand how does any of these

work and interact with each other. We want to know a lot more about how to make these things safe before they start controlling larger and larger parts of our world.

So I think the development of these technologies running way faster than we know how to safely use it. It's kind of like we're sort of having a little Manhattan project moment right now in AI, and I think it could happen where we arrive at an atom bomb a lot faster than anybody knows how to deal with an atom bomb. I think seeing kind of how close we have gotten and having had a number of pretty terrible nuclear events, but how close we've gotten to even worst ones. I think we want to be mindful of how much we invest into safety and precaution before we take on this sort of AI kind of eating the world. That's [inaudible 01:27:23] of where I tend to donate my account.

Now as for how I kind of manage my life around the fact that I try to donate a third of my income, the answer is not very much. It's actually pretty easy to – It's kind of like I think if you donate almost all of your income and you live on like a fixed amount of money, that's pretty hard. But if you donate a percentage of your income, then it's actually pretty straightforward. It's kind of like when I was making 100k, it's basically I was making 70k, because I donate a third. It's like, "Okay, it's not impossible to live up 70k." [inaudible 01:27:54] 130k, then I was like making 95. Okay, it's not impossible to live up 95.

[inaudible 01:27:59] You're kind of just like a little bit behind all of your peers. Basically, as long as your income is scaling, you sort of – I take UberX's now. I used to always take UberPools, but like it's kind of not a big deal. I think one of the things that it's easy to do especially if you're donating a lot of income and you're feeling very frugal about what you spend your money on, it's easy to become overly frugal or overly conservative. I think almost always when you can make the choice of saving time with money, you should almost always do it, because time is just so f – valuable. Especially just in the process of building your own career, the more time you can unlock for yourself, the better. So anyway you can spend money to unlock time, you should prioritize spending money on that over anything else. So it's kind of like unlock as much free time as you can until you can start spending more money on your [inaudible 01:28:46]. To my mind, that comes fairly late in that process.

[01:28:52] Q: [inaudible 01:28:52]

[01:29:33] JM: Sure. So the question is – I guess, first of all, what is a permission blockchain versus a permissionless blockchain and how widely will each of these be adapted?

[01:29:42] HQ: Sure. So permissionless blockchain is the easiest to define. Permissionless blockchain is like Bitcoin or Ethereum or any of the cryptocurrencies that you can speculate on. These are all permissions. By permissionless, what that means is that only all you need in order to go get some money and start playing around is by just computing an ECDSA public and private key and then you can start receiving money and start doing interactions. Permissionless literally means that you don't need to get permission from anybody in order to start playing.

A permission blockchain is one generally speaking that will be run by, let's just say, a company. The idea is that only certain people are allowed to participate in this blockchain. It's not that you can just create an ECDSA key and start sending transactions. Instead it's like, "Okay, this is like the J.P. Morgan blockchain, and J.P. Morgan runs all the servers that are the nodes that are full nodes of the blockchain and that also consensus participating nodes in the blockchain." If you want to send a transactionless blockchain, you can't. You have to be invited into the blockchain by somebody who currently is either running the blockchain or belongs in this blockchain system. So that's the difference between permission and permissionless.

Most of the enterprise blockchain solutions you see, like Walmart's blockchain where they're tracking lettuce, or the J.P. Morgan stable coin that's going to use their own private blockchain. These are all permissioned chains. Not just any random person could start transacting J.P. Morgan stable coins. You have to be invited in. So it's an invite-only network.

So what do I believe about whether which of these will succeed? It's likely there will be many more permission to blockchains just by number. Because, literally, all you need for a permission blockchain is just like somebody to run hyper ledger once on one server somewhere. Technically, okay, that's a permission blockchain. It's kind of like asking how many open source projects will there be? Well, there will be probably be a s— load of them, but there will be very, very few that actually get a whole lot of traction.

So there'd be this whole long tail of like enterprise blockchains that probably nobody use. Then a small number of them that actually get traction, but the permissionless blockchains are probably the primary things where crypto or blockchains in general enable new kinds of things that weren't before possible.

A common criticism of permission blockchains is that it's kind of like, "Well, how is this different from just like a – I don't know, just like a ZooKeeper network," or like just how is this different from just a database that you manage? It's like, "Okay, well there are five people instead of just one person, because we have a round robin consensus system with like – It's like J.P. Morgan and UPS and there are some banks. Fine. Okay. It's not just J.P. Morgan that controls it, but it's these five banks."

Okay, that's kind of different. That has a different flavor to it. It's run by a consortium instead of by a single server, a single party. But the properties of a permission blockchain are much more similar to what you can do with normal software, and there are systems like that that are not owned by anybody, in particular, that are shared by a lot of parties that don't need a permission blockchain. This was possible before permission blockchains.

Permission blockchains might be a nicer architecture with which to do this. But fundamentally, you could have done this anyway. Whereas, to build Bitcoin, we don't know of any other way to build a Bitcoin. People have tried. People have tried for decades before Satoshi Nakamoto came up with a Bitcoin design to create a decentralized form of money. Every single system that came out before Bitcoin failed in one way or another. Bitcoin was the only one to succeed.

In some very strong sense, we don't know how to build that without using decentralized blockchain. But for permission that works, we generally do. They just have some kind of nice features at the margin that made things better. So that's why I think permission blockchains are not likely to create quite as much value as permissionless blockchains. But I expect there are probably be some, but most of them will end up not ever getting used by anybody.

[01:33:22] JM: Okay. So we're going to call it quits at this point. I want to just give another thanks to Haseeb. It's been a real pleasure.

[01:33:32] HQ: Yeah. Thanks so much for Jeff for putting this together. This is really great, and you're a fantastic interviewer. So, yeah.

[01:33:46] JM: I want to thank, also, Titus, for kind of managing and overseeing this event, and Cloudflare of course. With that, again, if anybody is interested, you can come to the FindCollabs Hackathon, Saturday at App Academy, and let's hang out for a bit and talk.

Thanks again.

[END OF INTERVIEW]

[01:34:07] JM: GoCD is a continuous delivery tool created by ThoughtWorks. It's open source and free to use, and GoCD has all the features you need for continuous delivery. Model your deployment pipelines without installing any plug-ins. Use the value stream map to visualize your end-to-end workflow, and if you use Kubernetes, GoCD is a natural fit to add continuous delivery to your project.

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