POD OF JAKE
#87 - ANATOLY YAKOVENKO
AI-GENERATED TRANSCRIPT

Jake 02:18
Thank you Anatoly for taking the time and joining me on the show today. I really appreciate it and have been looking forward to this conversation to put it mildly for a while. You are the co founder and CEO of Solana, the world's fastest blockchain with super low fees and a super large market cap. That's $70 billion. Last time I checked biggest top five in the world. I think it was top three, just a couple of weeks ago. So huge success. And congratulations obviously on all of that. But I like to start with all my guests sort of as early as possible. Just sort of hearing your story for those who might not be familiar with salon or are familiar with you would love for you to share that. Yeah,

Anatoly Yakovenko 02:57
man awesome to be here. Yeah, I can I can give the origin story. So I'm an engineer by trade spend most of your career at Qualcomm and I got there because I was at University of Illinois like 99 to 2003. So during the.com, crash, working, you know, side projects, tried to start a start up with some friends, that was Voice over IP things like you know, Google, just Google Grand Central Dispatch, or you know, Venmo, not Venmo vomit if people remember what that is. But I ended up at Qualcomm working on performance optimizations, whatever, whatever was needed. So typically, in the operating system kind of space, like working on the kernels, virtual machines. Looking at a lot of trace 32 debug Windows one point I had like dreams where I was, you know, had to step through multiple debugger windows at the same time. But had a lot of fun and kind of heard a crypto early in those early days when Bitcoin was still CPU mining. And but really got into it, I think more so from an engineering and goal in 2017. A friend of mine, Steven is one of the co founders, we have the side project to build deep learning equipment, you know, bunch of GPUs that were mining crypto in the background to pay for the cost of the hardware. So really, it didn't get into the idea that crypto was anything but kind of like a thing, right, like a thing to mine, right? Like, make some money or but it seemed like a good angle to enter deep learning. And that's when I started really digging deeper into proof of work, why was necessary? What is the idea of mining and how is it provided? censorship resistance to the network and the incentives that it's creating to keep the network running. And I had this eureka moment,

which later turned out to be BDS. But basically I had like two coffees or sorry, one coffee and two beers. Instead, cafe silay in San Francisco can sleep until four in the morning. And this thought popped in my head that there's a way to encode passage of time as data. And the idea was basically like that there's a what I later learned the stinker called the verifiable delay function. And it really blew my mind. Because Einstein's equations right, work forwards and backwards in time. There's no mathematical definition for time. And it can really google anything on the internet. There are some folks working on our say locks and things like that. But the only later when it you know, talk to Zaki, he was like, oh, yeah, this is a VDF. Talk to Dan Bonet. Which is pretty funny, because I think if I would have Google, the Zamboni at that moment, I probably wouldn't have ended up starting so on.

Jake 06:13
Yeah, it's interesting. I think a lot of people, you know, if they knew that their idea existed, when they came up with it, they might not have pursued it. But I go by a rule of thumb that if you haven't heard of it, it doesn't matter if it exists, you can do something bigger and better with it. Maybe I heard you on a couple of podcasts now talk about this eureka moment, and I got to get to the bottom of whether it was two coffees and a beer, or two beers and a coffee because people are out there trying to make the next Ilana. I've heard I've heard it both ways. Now.

Anatoly Yakovenko 06:45
I'm down with people experimenting to see which one has a higher success rate.

Jake 06:51
It's one or the other. It's coffee and beer. It's a very simple recipe and you can go create your $70 billion blockchain. It's that simple. But okay, so you talked about early career at Qualcomm, I think it's interesting, like a lot of the team, you brought with you over from Qualcomm to build salona. And I've heard you talk about Qualcomm's culture as being like pretty unique. You guys built things like super fast, but it was kind of like a chill environment being in San Diego. How has that culture? You know, has it I guess? Or how has it

translated to salona? And how might that be like, sort of different from, you know, Bitcoin founding culture, Aetherium, etc, just given that sort of the people behind the protocol, I think makes a pretty big difference in where it's going.

Anatoly Yakovenko 07:43
So that was actually the real innovation. Okay, so when I, whenever I just started talking to folks like, Hey, I think I, I think crypto is interesting. And it seems like a new OS, the feedback that I got in crypto like VCs, was that what you have from your experience, and what you're bringing is basically, the experience on the team that you can put together, that the folks coming into the event that that moment in time that were interested in like doing this, were just kind of a next generation of builders that crypto didn't have at the time that we were just way more experience with deep background that was very relevant. And that was the unique thing. And what I looked at the kind of smart contract systems, I immediately thought that this is going to be an operating system. A unique one. And where I kind of I have a natural call come was that there's only one of these right, there's only one world's computer. So the one instance of salona. And that's becomes a very constrained environment, resources are very expensive. And that is an embedded system that's trying to blood sweat and tears find that perfect trade off between power, diarrhea and performance that the folks at Qualcomm you know, spent a decade working on. And it's kind of like a, it's like a impossible problem. You come into it with the idea that you're never going to get this right. It's never going to be perfect. And you're just going to eat glass to like get that extra 5% optimization here and another 5% there. It just like just keep at it. Because when when there's so much when it's that tight, right when constraints are about close. A little bit is a lot.

Jake 09:46
And so I imagine sort of this slow but consistent iterations like a big part of your plan. I know it's sort of dependent on on the improvement of, of hardware over time. Can you talk about like sort of that iterative approach and How you guys are going about it?

Anatoly Yakovenko 10:01

Yeah, we we never had a big rewrite, and not planning on it. Even from the initial days, what we did is like, Let's build the smallest thing that shows that we're on the right track. And that was just single know that can handle transactions, right. And we kind of demonstrated that, okay, a single node was really, really fast. And you can encode consensus inside the transaction layer. And that means that you could, in theory, scale it to a very large network, right? And then, and then we added, we iterated from there, we had a single node that was the persistent permanent leader, and it can replicate to a very large network really quickly, and you could show Okay, performance is still really great. Votes are handled this transactions, everything's working fine. And then you start building like fault tolerance and rotation, and like all this other, you know, stuff that's necessary for a true BFT system that's censorship resistant. And each one of those improvements was a baby stuff. And like we are on the kind of downhill run of software, where you look at the hardware, and you look at all the metrics and benchmarks and performance, and you try to find those moments where you either optimize one piece, or you optimize a couple pieces in the same pipeline, and just incrementally make the system better with every release. It's not like glorious, right? There is no like, Turing Award ACM paper at the end of this tunnel. It's just the work. But it works. But that's the cool part about it is that, you know, next next, we started with needing for GPU cards to get 2 million signatures per second, latest and greatest Nvidia GPU card can do 7 million verification signature verifications per second. So the cost to do what we thought was possible in four years ago, has dropped by a factor of four in terms of hardware costs. And that improvement just continues, all we need to do is just keep writing software that gets out of that way. Because it's very easy. If the software can handle it, kind of our ethos is that if we can get out of the way the hardware when the network is running, that gets this massive adoption, you know, like the next, you know, crypto kitties, 2.0 is on salona. And everyone's using it. And the network starts getting congested, what do you do? Right, the fastest thing that you can do is like, tell the validators you guys got to go upgrade. And they'll do it because everybody wants to see the stuff succeed. There's so much internal like momentum, in the community in crypto in general, that if all it takes is just, you know, throwing some GPUs or

SSDs in a box, to get to that next level of adoption, everyone's gonna do it.

Jake 13:07
Right. And that's like a bit of a differentiator from you guys, as I understand it, like I'm not super technical, by any means. But I'm like, I think you have a different thesis, even from the early days was salona, you were asking like the validators basically like the volunteers and your system to do quite a lot, basically, like on the grounds that, you know, you weren't trying to make it like as easy as possible for everyone, you were trying to make it super compelling, so that you could get, you know, a handful of people or a dozen, a couple of dozen people to do sort of like whatever needed to be done to get involved. Is that sort of a remain like a persistent part of the thesis for you guys to sort of have these requirements over time.

Anatoly Yakovenko 13:47
Yeah, we we only focused on how do we make the system as cheap and as fast as possible. And then, if that works, we just assumed, okay, there's gonna be some percentage of people that are willing to go drive out to you know, Hurricane Electric in the Bay Area, or whatever you're live live in, there's always some colo, he can come out to put a box there doesn't matter what city in the world you're in, there's always a place. So that was kind of my thesis is that, like, let's make this thing. Awesome. We'll find the people that are willing to go do it.

Jake 14:25
Right. So let's, let's rewind back a little bit. We talked about the beers and coffee eureka moment for and you mentioned like something like it maybe was already figured out, but you thought it was novelette time and maybe in a way it was I'm not exactly sure, but it was sort of a solution, correct me if I'm wrong to this like clock problem, right? Where you needed to, like create an arrow of time. Can you talk about like in the simplest terms possible? How you like what that solution is?

Anatoly Yakovenko 14:57

Yeah, so that time I didn't even know how to use It was just really like, holy shit, there's a way to there's a mathematical representation of time and it just blew my mind. Later on when I got all my like Qualcomm buddies together, we started trying to design the system, it just became obvious that there's a similar problem in blockchain an optimal optimizing these things at a network level that exists in radio. And intuitively compared remember, to block producers transmit a block at the same time, you get a fork, right a Bitcoin, that's you get a fork, you get a, somebody has to pick the next fork by producing a block building on top of it. And I'll see you resolve it. But until that happens, the network is in this weird noisy state where nobody knows what's the actual final state. In radio, two towers transmit at the same time or the same frequency get noise, because radio interferes at the same frequencies. So 2g networks TDMA, old school cellular networks, they rotate the transmitters the towers by time by signing them slots. So Tower One goes, let's say at second one, tower two goes at second two, or three goes second three, that's a very scalable thing. Because reality, these are like, you know, very, very small slots, like, you know, 20 milliseconds, and you have a bunch of frequency bands that you can allocate it to, you can kind of scale this out to a single tower and a lot of cell phones, and nobody is stepping on each other and information can pass through. And that's a very intuitive, simple way to get the stuff to work. But it's really, really hard to blockchain because you don't want to rely on a clock server, you don't want to have some central party controlling the time because at any moment, they can effectively halt the network or cause it to stall or do a denial of service. So it kind of became obvious that there's a way to use this VDF as a, as a source of time in the network for consensus, as we were kind of in that incrementally, incrementally building everything. It wasn't obvious at first, but it just kind of like ended up that way. So a bit of luck there. You know, maybe maybe that eureka moment was like one of those true, true premonitions, you know,

Jake 17:35
yeah. And so he sort of you have this moment and like, do you immediately say, like, I'm gonna go build a blockchain, or like your friends together? Like, like, quit your job and everything, right?

Anatoly Yakovenko 17:49
Yeah, I just kind of talked to some friends that I play underwater hockey, everyone, I started Everyone listen to the podcast, it's sort of this weird sport, but it's just the thing that you do, because it's fun. Let's assume as any other sport as we say it, that's our job, certainly. But, you know, you wear fins and snorkel and you dive up and down, but there's a group of people in SF and a period of play it and that's a group that I've been playing with for over 15 years, basically, and when I some of them play, you know, some of them are VCs and I just kind of mentioned that hey Kryptos really hot you know, thinking of doing something there I think operating system this could be like an operating system play and the advice that I got was that just go for it. Like the skills that you're bringing are so important such a huge differentiator that basically like they're like double back no matter what it doesn't matter what you do. That was like the first you know handshake 25k Check commitment and at that time since a no raise before it was such a large amount of money that I was like holy shit I'm gonna have to do it this is enough for me to like pay run for the next six months so there's no reason not to and I know how much work this is gonna be

Jake 19:14
you might have just kept playing the the underwater hockey

Anatoly Yakovenko 19:17
Yeah, I haven't played since I gotta get back out

Jake 19:21
there. First of all sounds pretty fun. And I think this is probably salona is probably the most important contribution underwater hockey has had to the world. Then a lot of old guys maybe having some fun but but anyway, these guys they say that they're gonna back you sort of helps push you over the edge to leave your job and start this hugely ambitious thing that is now now reality. But in the early days, you'd started this like around the time of last hype cycle, right where like, Bitcoin was around like 20k and then it crashed and like I understand Some of your backers backed out. What was it like? Like getting through that turbulent beginning to just persist for another three, four years to get? Yeah.

Anatoly Yakovenko 20:09
So that's really what I got connected through some friends to Raj. We have met previously before. But, you know, he was like, he just quit his job at Amata. Like, he was mostly thinking about what is the next thing I'm going to do in Health Tech. But he has no technical and has raised money before. And kind of like, immediately thought, Okay, this might be interesting. Kryptos can kinda interesting, I'll give you six months to see how far we can push it, raise money, put the team together. And it was such a turbulent time that, I don't know, I think that's what hooked me and everyone else, how crazy thinks we go up and then come down as both like exhilarating, that experience, I think was probably pretty lucky for anybody raising funding in Silicon Valley. Because how kinda like exciting cryptos to two people. And even though like a bunch of funds came in, that came out as eath dropped by like, 80%. It wasn't like crazy hard for us to raise, but we needed. What's interesting is that, like, we never raised kind of our competitors at the time. And this is what really scare me. Like, folks like hash graph algorithms are raising, like $100 million insane amounts of money. And it felt like they have a war chest, you know, that's what those things were called, like, taken out, engineer us, right? Because of the amount of money they raise. And I, Myself was an engineer, like, I was, like, myself, as a CEO, I was worried about it myself as an engineer. It was never the biggest team that succeeded anywhere. In my career, it was always like the three guys that were like, really smart and innovative, and just works that are asked, and the right things. So I kind of knew that we had the best team, and we're gonna build it perfect. And like, it's gonna be awesome. But, you know, like, it's still scary, right? Like, in comparison, right? All the total raises we had up until launch was, I think, like 22 million bucks, we never had more than 20 months of runway, really, at any, at any moment in time.

Jake 22:36
Was that something that was like intentional, or it was just sort of tough. I mean, like,

Anatoly Yakovenko 22:41

three years, it was, I would, I would have definitely raised this more, but we just never had the opportunity. And that probably saved us, because it forced us to be extremely disciplined about how we built and what we built, we never tried to build DVM support, because I didn't think it was gonna make the product like the chain faster. And the core innovation that we had was that this is going to be the fastest cheapest network in the world. So even if there is this idea that there's all the current dabs at the time, or, or EVM, dabs, I was like, okay, but if we bolt on EVM, it's not indistinguishable from all the other EVM chains. Because right like that, we killed our own innovation. So I was always like, had we had infinite amount of money, maybe would have built both, but I think that would have kind of killed us, right? Like you start lose focus. You don't you know, you don't prioritize. So the core key thing that makes your product special. So if anybody's listening, that's a founder, I wouldn't worry about your competitors more money, I would worry about your focus, like how, how focused Are you on the core thing? That is, you know, I think it has value against replacement. Like if this is the one thing that you replace, and like, the product, no, is no longer valuable? What does that core value piece?

Jake 24:15
Yeah, it's interesting that it sort of reminds me of like, some principles from Bezos starting Amazon with just like the relentless customer obsession focus, I think your guy's equivalent is what I've heard, like you described as like the North Star, being just to optimize everything about the system that doesn't sacrifice performance, and sort of that relentless focus on being the fastest and those transaction costs. And even if that means going against the grain, and in that case, not doing any VM, is there other trade offs that you guys have had to make that were sort of hard to swallow over the course of the evolution, sort of in pursuit of that North Star?

Anatoly Yakovenko 24:52
Well, like we, you know, our validators we told them, you're gonna have to go to like a colocation and build your own boxes and stuff. And so many people are like, it's too hard, I don't want to do it. These other guys are allowing me to, like, you know, click a button on Heroku and launch a validator. I'm like, okay, that's not gonna work.

Make it easy, right, then you're sacrificing all the stuff that makes us think special and took, you know, like, we had to find our people. And we lost, you know, we did, we launched with, like, 40 of them. But then now there's, you know, like 2000 nodes in the network or something like that. But in that, in those early days, it was hard to find them. But pretty cool that we did, like, it was pretty cool to find, like that small group. And that's better, right? Like, when you start building something from that, like, really early days with a small group, you build the camaraderie and like that knowledge base and kind of, you know, you kind of get your your team, right.

Jake 25:58
Yeah, no, definitely. And I think there's something about like, just sticking, if you stick to one sort of core thesis, one core thing that you're going to provide and just put blinders on to the competition and everything that everyone else is doing. Think that's the only way to, like, really just not fall into the crowd, I guess. It sounds like and you guys obviously know how being one of the top ones out there. I've certainly done that. How has how has salona? Like how it exists today? And maybe the answer is like it hasn't. But I'm curious how it's changed from when you were initially going around, like raising seed money. You're calling to the blockchain with NASDAQ speed. First of all, actually, if you could just sort of introduce why you were calling it that and like what the metaphor is. And you know, how it might have adapted since

Anatoly Yakovenko 26:49
this man like, it was this crazy idea that I thought, you know, censorship resistance, what's the point of it? It's really information symmetry, like how quickly can you propagate data around the world? In with Bitcoin, that idea of censorship resistance is over very long periods of time. And it's really cool that that works, that I can effectively have this guarantee. Maybe if not today, but within two weeks, I'll be able to spend my bitcoin that's a very important guarantee, that's what gives a value that eventually the network is going to figure out what the right fork is. And then like, push push my transaction through because there's some honest block producer out there. But what I thought was interesting is like the other side of it, well, like what if you could make censorship resistant, give you

guarantees at those physical limits of speed of light. And again, because optimization Qualcomm, this is my my gym, and I was like, I know that I'm uniquely positioned to to make this work. What is it good for. And the one thing that I had this hobby that always frustrated me was trading, getting access to data, CME, NASDAQ, all those guys are charged charged millions of dollars for you to see what actually happens in that exchange. And they also even if they charge that motion, and give it to everybody, you have to be like special. And then you have to be special to have a machine that's in the same building as everyone else that's trading, they'll literally give you a cable the same length as everyone else to make sure that you have that guaranteed access to information. So if you're inside that building in the club, you have censorship resistance, real time censorship, resistance, you get access to the exchange, that's guaranteed when you submit a trade it goes through. But if you're outside of that box, you know, you're nobody cares, right, you shouldn't have access to anything. So I thought that we could build an engineer system based on BF T and all the stuff that we know about high performance, low latency computing from Qualcomm, that could be competitive at that level. Because if we can make it really, really fast, like at the limit, then information as passing through salona, the state transitions as transactions, they propagate at the speed of light through fiber. And that's as fast as news travels. If you're a trader, that's really all the honestly care about. If you look at you know, see your Bloomberg, Bloomberg, you know, news flash alert, you look at the market, you want the price reflected on all the markets already, you know for that news. So if you look at market, New York Stock Exchange for that news wire, you're looking at one like serum running on top of cilona. That price is already reflected. There's no arbitrage between the two and therefore, they're in theory, so long can't be as good of a price discovery engine as NASDAQ, but it's open and free, anybody can grab some hardware put up a box, and now they're as good of their they have that like that in the clock, you know. So that was really like kind of a, an idea, you know, to get us to give give us vision, but really rapidly became obvious that finance is what blockchains are good. They're good at markets are good at open finance are good at running marketplaces. And this might be bad, you know, the golden use case, the most important use case in crypto.

Jake 30:42
Yeah, it's interesting, because, you know, Bitcoin, like people say bitcoin is money. People argue about like, whether or not Aetherium is money. I haven't really heard this about cilona. But when I've heard you describe it in the past, you talk about ambition of basically creating the world's largest, most censorship resistant, fastest, cheapest communications platform, correct me if I'm wrong on any of that, but why do you why do you take this like, different angle? Like, what's what's different?

Anatoly Yakovenko 31:11
I partly because I don't get the money thing. Anything? Why does it matter if it's money or not? Like, it's just kind of seems like a? I don't know.

Jake 31:25
Like a definitional seems like a definitional argument that isn't really relevant to me.

Anatoly Yakovenko 31:30
Yeah. It's like, what is it? What is it useful for? That's the question to me is not whether it is or isn't money, it's like, okay, what is it useful for? And that's maybe like a very engineering perspective. So what I wanted to build something useful. So here's my last great charge engineer. And I never really thought of the Cydia like if you're building a money, then you got to pick a use for it. And is it payments? Is it this and then build for that, you know, I guess I in a way, like, I just didn't never set like as a as a thing that I personally could really build for that vision. But having this open censorship resistant message bus that's used for price discovery, that's a very useful thing. And that that's honestly what resonated with folks like Sam from FTS folks from jump, that not only that, that division resonated, but we could actually, like we showed him a demo this thing called breakout salon comm you smashed your keyboard, in transactions fire, and then light up on there confirmed. They're like, Okay, this works. This actually, this actually works at scale.

Jake 32:47

I think, you know, you mentioned like, engineers just want to be useful, I think, or want to make something that's useful. I think everyone has this sort of deep desire, or maybe not everyone, but a lot of people just like deep desire to be useful. And engineers have this, like, different twist on it, where they know that they can build things, and they just hope to build things that are useful in this future that you can envision, that could be built on top of salona it's very hard, at least for me to like, sort of imagine what the future could even look like with this very different sort of, like baselayer for, you know, a sort of a revolution of like, the internet, among other things, and I guess how, what gets you most excited about like, the super connected world, that's a lot of might be able to support?

Anatoly Yakovenko 33:32
I think, you know, like, it was obvious to me, okay, we get like the trade fi people that jump to Scott Saska high and like all those folks to start, like working on running, you know, whatever their their algorithms and a censorship resistant open to everybody marketplace. That would be cool, right? Because now, you you've kind of cut out one middleman and like, created a whole new system for finance. But I think, especially now, it's kind of obvious that Kryptos is a way to disintermediate a lot of these sexualized properties in the digital space like Google like Facebook, because, you know, like, you know, reality is like the micropayment on the internet as a Google Ad View, it's point to sons, right? This is the this is the the business model for the web. You launch a website, you get users, you serve them ads, and then the incentive structure for that are really broken because then you're trying to keep your users addicted of content and alike and then steal their data and then shove them information that they really want through ads, right and then so then like, that loop sucks, but stuff that you see with crypto is an artist made an NF T sad that has now in Better than a smart contracts that can track secondary sales. And all of a sudden, there's now a web property that has no ads at all, and how it's monetized. Like it is totally excludes Google and Facebook. And the whole purpose of this like community around, you know, did you know pixelated monkeys is to have fun and like create this dynamic network where as much sharing and like this trading activity or whatever happens. And that that environment is all around

just like super connecting people, people having fun, and like, not like stealing anything from them. And it's such so much better than the standard web model for for monetization. And it to me, like really just kind of like, opened up my eyes in the same way that in the 90s, you know, all the Linux folks were talking about a Microsoft tax V PC, like, I want my personal computer with my hardware that I put together and then run my operating system. And there is like a reason why people want to do that, right, because they want to have this sense of ownership. That doesn't mean they'll totally replace, the other side will probably still have a bunch of websites and monetize through ads. But just giving this opportunity, right, that there's now a different way to do it, I think is just a huge effort, like a huge new way, right? Like the people that are building that next generation of builders to start looking at this as really like the place where most growth is gonna come from where you can actually potentially build a better environment.

Jake 36:45
Okay? So, you know, pretty untraditional path for you working at Qualcomm for a number of years. And then I think mid to late 30s Correct me if I'm wrong was like when you left to start salon. I'm like a big advocate for you know, life's not a race and like, even for those with, like extreme ambition, want to be the next great founder. And they look at like Zuckerberg started Facebook at 19 Steve Jobs started Apple at 21 I don't think you know, Vitalik only furthers the narrative with starting a theory. I'm so young. But there's also people like, you know, Bezos started. Amazon route 30, Elon Musk was pretty late with his most recent companies. So you sort of started a little bit later than a lot of these like, you know, big storied founders. What would you say to like kids who are like, you know, 20, or however old who are like rushing to, like, start their first company and like, raise VC and just get after it? Like, anything that you can share from your sort of unique perspective?

Anatoly Yakovenko 37:49
I'm sure you start a company at 20. And if you don't, are you gonna miss your opportunity? You know, like, this is, again, kind of this is my not intentional, but in my carrier, I was always and maybe, actually, maybe because I'm more of a an athlete. The it was always

like, go, you know, when you're in a fork, and when you're cycling, go uphill. You don't know which way to go just go uphill, because because that means that on the way back, it's gonna be easier. Right? So you kind of want to front load your challenges in your career, to the point like, you know, take classes that you get Beason because they're hard. And don't worry about the grade, right? People that are trying to optimize for optics for grades on their for their own purpose, I think are missing out on like, failing, and learning how to fail and extracting the most kind of value out of those failures. And if you're an engineer, and you're like thinking about should I start a company, that opportunity is going to arise for whatever you're interested in, you keep going deeper and harder problems in whatever thing you're interested in. For me, it was operating systems, who woulda knew right? That in the 90s, when Windows was the dominant OS for everything, but there would be an opportunity for any other operating system in the next 20 years. Right? You would, you would think, in the 90s, that, okay, this was the final OS, everything's gonna run at Microsoft, we're done. And there's only one point to even study this stuff or go deeper on it. Well, turns out, you know, they didn't build the thing that runs phones and builds the thing that runs smart contracts. And now, you know, the Internet Explorer is a fork of Chrome, which is an open source project originally. So whatever, whatever think is like the true true thing today, if you're interested in just keep going deeper. And, you know, it may align that there is, you know, the market or whatever, you have some innovation from the technical depth that's worthwhile pursuing as its own thing. Big companies are really slow, because they're, they're protecting revenues, right, they found a business model of salespeople, they need to basically focus and guard that business model and grow it. So it's really hard for them to innovate. There's no way Google could build a ad free web stack that's NFT powered. It's just not in their DNA, even if they like even if they have all the smartest engineers that could do it outside of Google. They can't do it and go inside Google. No chance. So yeah, I wouldn't worry so much about the timing of age and when to start a company but like always, always been that for it to try to go uphill, see what you can learn.

Jake 41:10

Yeah, I think that's a great perspective. And biking uphill is a pretty cool metaphor. easy one to keep in mind. Last question here. We've talked a bit about cilona, and where it's come from and where it is. But for the next, you know, so last three or four years sort of came from nothing to where it is now. next three or four years? What are your like, wildest ambitions for what you might see in the salona? Universe?

Anatoly Yakovenko 41:39
I really don't want like the metaverse to succeed in centralized space. I don't want that to be the first Metaverse that people experience. I want to I think it's a cool bouncers. It's a, you know, huge SciFinder. I think the thing that we're empowering people is not like the blockchain, it's the cryptography, having people that have that are not super technical, but can use a browser, you know, they understand what a link is. But they don't understand HTTP, or the internet, or, you know, the OSI layer seven stack. I want that level of adoption for cryptography where they know that there's some magic words that create the signatures that do stuff in this shared state that we all have. And that that happening outside of big centralized systems, is what I think could bring the metaverse into existence where it's not just like, you know, a horrible zoom to still be just with VR. That can be entertaining and fun and like, funny, and that that part of it is really what I want to see like one without and this like negative loops that we see right now on the web. If we can do that, I think that would be amazing.

Jake 43:09
Yeah, the Zoom dystopia is pretty scary. In any place that resembles anything like that, but Alright, cool. Well, I know we're coming up on time, but really appreciate it and totally, people can go follow you on Twitter, your co founder, Raj, they can follow salona go to the website, anywhere else you want to point people before we wrap up. And you know, just again, thank you very much for, for coming on and spending the time and I know you had a couple of distractions, they're in the way so appreciate you staying on and making them happen.

Anatoly Yakovenko 43:44

Thank you, man. Yeah, follow us on Twitter, go to solano.com. If you're an engineer, there's always a hackathon right around the corner. So watch out for those. And we're, there's a lot of folks in the community just set up just setting up hacker houses all over the world. Chicago, I think one in Miami now, SF Lisbon. Just people that want to, you know, sleep on the floor and kind of share the pain. Like build stuff so that that's your thing. You can find it find find your tribe, and go have some fun