Cleaned Participant 29 and TE Study

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SPEAKERS
Lisa Wocken, Participant 29

Lisa Wocken 00:00
Hi, Jeff. As we go, Hey, how's it going? Going? Great. How are you? Good to see ya. And I was just gonna say I don't know that we've actually met but I know you and Livia have some familiarity. So wonderful. I'm way too long.
Participant 29 00:43
Yeah, I'm really happy you're you're joining us today. Lisa is going to continue the interview and I'm going to disappear in a minute for for you not to get distracted, but to people to talk to and I'll let her do the intros and I'll take some of the cool Nice to meet you, Lisa.
Lisa Wocken 01:02
Yeah, yeah. Thanks. Thanks, Livia. Yeah, so first off, we're super excited to have you I am a web three social researcher having done work on leadership in DAO's with $name$ but also I'm super excited now to be partnering with $name$. And our big sort of exploration is on what is token engineering, really trying to help evolve and define the field as it advances and progresses. So with that, we just have a couple things that we want to share with you and then know if you have any questions before we jump into the interview. The first of which is we're kind of shooting for like 45 to 60 minutes so we may not use like the full hour here but really just want to thank you, and I appreciate you giving us that time. And the outcome of this is really about getting the practices and needs and challenges of token engineers unearthing those and that's really the outcome. And the end goal of this is to have a findings report that includes those things helps us further define the field and illuminate the practices challenges and needs currently for token engineers and in the field at large. And then really other than that, we're just recording this session. And so if you haven't already seen the, you know, the session will be recorded. You'll see that pop up here shortly recording in progress. Great. And this is really so that way we can you know, really focus on what you're sharing with us. So Livia will take notes and I'll just be focused on asking you the questions. And you know, it's a voluntary study so you can withdraw at any point, but most importantly, we're just excited you're here. So do you have any questions for us before we begin?
Participant 29 02:50
I'm eager to dive in. All right, great.
Lisa Wocken 02:55
Okay, so first and foremost, we just want you to share a little bit about your own personal journey coming into token engineering and how you got involved in it. Sure, yeah.
Participant 29 03:08
So I studied electrical engineering. Yeah, in way back when, and then I kind of took it hard right into digital marketing. So I was, you know, working in travel and tourism and, you know, traveling in Southeast Asia and doing digital marketing stuff, and I came across blockchain technology, and I thought it was really neat. But, I mean, aside from all of the you know, the issues that we've seen over the past couple of years, it really struck me that there was like, a lot of people are talking about sort of the, the, how and not so much the why. So I guess my interest in blockchain tools came about, you know, in 2017, through sort of a marketing lens. And I really wanted to explain sort of the power of these tools what they could be used for, rather than, you know, the technical details of how they worked. So that was kind of my foray into the space but then, you know, I got deeper and deeper down the rabbit hole and I found some of $name$ writings, writing some of $name$, writing some of $name$, and some of these tools like bonding curves, like curation markets, and token curated registries really started intriguing me sort of as like building blocks that could be used to build really interesting things and then, of course, going further down that rabbit hole and seeing you know, these building blocks need to be plugged together, we need to figure out how they work, not just on a technical interoperability, like you know, like ERC standards or whatever, but also sort of a larger like engineering design perspective. So I guess that's when it kind of pulled in all of my schooling around circuit design. Because circuits you know, you don't just have to connect two wires together. You design it, you simulate it, you test it, you see where it explodes. You do that 100 times before you put it in a consumer facing product and put it in someone's pocket. And it really struck me that you know, we were having the same sort of Renaissance moment for token engineering, you know, that must have happened decades ago, or, you know, for even centuries ago for traditional engineering

disciplines. So yeah, I guess that was my my intro to the space. I read a lot of kind of advanced, you know, early before it was even probably called token engineering. I think$name$ coined that term. And then it got picked up, you know, in the $name$ and $name$, $name$, all that kind of stuff. I think it really rose to prominence through a lot of those initiatives and experiments and so on.

Lisa Wocken 05:51

Wonderful, thank you. Um, on that note about, you know, maybe before it was even called token engineering How would you currently define token engineering?

Participant 29 06:03

I would say, I mean, the engineering discipline is sort of a technical and social discipline. So you have sort of the social responsibility that and this applies across every engineering discipline, if you're building a bridge, or you're building a microchip or you're building a skyscraper, you know, we can't put the onus of responsibility on every person who uses that tool. We should make sure as the engineers and this is why it's a whole you know, there's an engineering ring, there's an engineering stamp, and there's a process for all of these, you know, bridges, skyscrapers and all that where you have to get sign off and stamp and, you know, there's, there's a whole sort of social responsibility almost like the Hippocratic oath for doctors, but for engineers to guarantee sort of the safety of social public infrastructure. And I you know, that seems to have clashed in the early days with the sort of software development mentality, which is move fast and break things. Because you know, if you need to update the Facebook UX, then you just do it with a with a pull request. So there was a bit of software development like we can do stuff and change it later mentality in the in the blockchain space, maybe there still is. But now that we've seen you know, multiple groups sort of upgrading the planes while in flight, you know, the theory $Ethereum$ switching to proof of stake other things. I think we're realizing that a lot of this stuff needs to be thought of beforehand and planned for in terms of like full lifecycle development as well. I think in web early web three, there's a lot of like hacking and hackathons and like pieces come up and then people just jam them together and see what comes out which is interesting. But it's also potentially unsafe, because it's not all about just implementing a tool. It's about maintaining operations. It's about you know, end of life, what happens when these things fade out. There's you know, these are all established processes in engineering safety. This is a book that $name recommended by Nancy Leveson called $Engineering a safer world$ and it just goes through, you know, all of these engineering processes around graceful shutdown, you know, cascade failure, protection, all of those sort of longer term considerations for these tools. So in my mind, token engineering is about bringing all of those existing engineering practices and applying them to the context of economic design and so tokens and how they flow around a network, just like electrons flow around a circuit. We have this sort of new substrate of design, which is, you know, blockchains and tokens that exist on those blockchains. And we need to figure out how to design tests simulate, and make sure these systems are safe before we push them out for mass consumption.

Lisa Wocken 08:56

Wonderful, thank you. there anything that you see token engineering solving for that other fields are not solving, like what's the unique differentiated value of token engineering?

Participant 29 09:11

I think it is. I mean, it doesn't lack precedent. I think actually, token engineering would probably be somewhat similar to like Power Systems Engineering, which is which is a branch of electrical so in electrical engineering, you either go big and do like power systems, or you go small, and you do microchips. But I think it's interesting to think of, you know, the interoperability between different token networks, like the interoperability between different power grids, because we have all sorts of differences. You know, there's 50 Hertz in Europe and 60 Hertz in North America. We've got, you know, different types of generation different, you know, parameters across the board, and then we have to connect these together, and we have to make sure that that you know, a failure somewhere doesn't create a failure everywhere. So there's all sorts of processes that exist in I guess, it's probably under like complex adaptive systems. So you have humans in the loop. This is what makes it particularly difficult. It's not a closed loop system. You have anyone able to come in and make a change, like, I'll go turn my light on or turn my light off. And I might respond to incentives to do that, you know, if they say power is more expensive during peak load, then I'll probably do my laundry later at night. So there's all sorts of interesting sort of like, incentives mixed in to these systems already. And I think we're just applying it to a new sort of substrate of design. So it's not unprecedented, but I think the speed and the interoperability of that stuff is is getting a major upgrade. You know, that the internet wasn't that much of an upgrade fundamentally over the post office right there just message routing systems, but one is way faster, and way more globally reach than the other. And I think we're kind of seeing that same, like how do we take these processes and you know, decision making processes or institutional policy choices algorithmic policy, that may be somewhat manual today, how do we bring that into, you know, the blockchain and beyond blockchain? DLTs in general, I think I go off track on that one.

Lisa Wocken 11:25

No, that's wonderful. That's great. And I I'm really appreciating already, like the specificity and the details that you're providing and, and the analogy that's all very helpful to us and, and understanding. So let's shift gears a little bit more. To

your daily work routine. I'm curious as to what are examples of typical tasks. What's your day to day look like? What tools do you use to accomplish your work? Um,

Participant 29 11:53

I would say a lot. I probably like 50% or maybe a little bit less than that on sort of, like operational tasks. So you know, running comms groups, you know, making sure the latest call got posted on the latest channel and a tweet went out and an article got written so I mean, a lot of my time is spent kind of doing that, like administrative logistics, finding new projects, you know, customer liaison with $name$ My role is generally like more client side. So we have kind of the deep engineers who do like the unintelligible math and my job is to kind of translate that to clients. So I that's what I like doing as well, I guess, or I'm good at doing. I guess it depends on the client as well. I'm much more interested in how these tools can be used for, you know, social impact or environmental impact, rather than, you know, making existing businesses more efficient. And, you know, that's not really the interest that I have. But of course, I think tokens of blockchains offer massive efficiency gains to those groups as well. So I would say a lot of the initial tools, I think one thing token engineering really needs is more of a sort of like iterative approach to tool building. So we've got like the v one, v two V three V four, testing, sort of like different contexts for those things to fit in. And I think we're still in kind of the v1, v2 area for a lot of these tools. So they're, you know, we promise a lot. And I think in five to 10 years, these tools will be much more, you know, mainstream, they'll have lots of implementations, testing failures, learning to iterations, and then redeploying in different contexts to figure out sort of the, you know, not necessarily product market fit like primitive primitive market fit. It's not, you know, going to market that these things are turning them into, you know, monetize tools. I mean, maybe it is actually maybe that's where our revenue, sustainability lies, and if so great. But I think, you know, small scale testing, figuring out what the issues are iterating those things, bringing, like modeling into loop. I think we could do more of that. I mean, it's happening in a lot of different places, but I think there's a lot more that could be sort of supported and facilitated in terms of building models, testing iterations, and then you know, putting those iterations aside and working on the new the new v2 or the v3 definitely could be could be more prominent, I think, in the token engineering space.

Lisa Wocken 14:45

Wonderful. Thank you, and if you were to share, so I think it's great that you're in the pocket that you're in that almost like that translation role. What right now are the things that you're finding most helpful and you accomplishing that? Work, whether it's a tool or platform or practice?

Participant 29 15:05

I mean, tools tools are rapidly evolving. I mean, AI has recently come into, you know, the fore. So you know, in terms of translating complex engineering, speak into layman's speak, we're starting to experiment with, you know, tools to kind of hone in the language. It's a little bit difficult with $name$ being at sort of the nexus of so many advanced areas that the language can change quite a bit depending on which audience you're talking to. So AI has been you know, a tool we've been playing with also integrating it with like an in house $name$ knowledge management system. So we're trying to figure out how can we store and you know, synthesize resynthesize translate our work and also make it more approachable for a our clients because they pay the bills, but also, you know, the wider space in general. You know, other tools we use, I mean, a lot of web two stuff. $Google Docs$ from time to time $Hack MD$, we use $Slack$ for Team communications. We're trying to think of other fun tools that we use, you know, the standard email, not so much actually. Moreso synchronous communication on Slack. We've built some tools in house our knowledge management system, is sort of a graph connected database of all of the sort of like internal working docs and even external publications are trying to figure out a way that we can easily you know, find projects that were done three, four years ago. How do you locate the model that was done on one of those projects and yeah, I guess I guess some of the other tools $CAD CAD$, is sort of on the on the deeper engineering side of things. They they use that regularly. We use $Block scienceLabs$ is also sort of $CAD CAD$ in the cloud. One thing we found with $CAD CAD$ is not everyone has the knowledge to run their own local environment, pull in all the data and run the experiments on their own machine. So $blocks science$ I had spun out [beside Labs], which is sort of a you know, you're just logging into the cloud and everyone's working on the same model, sort of like a $Google Do$c for for$ CAD CAD$ model. So we've been working on that a little bit, pushing forward the idea of smart papers on that platform. So sort of like a simulation enabled white paper. So you don't just make the claim you have, you know, a simulation there to support it. You can have user inputs, they can actually test, you know, what's being claimed in your white paper and run models and simulations and ensure verify that what you're saying is is actually true, sort of steps in that direction. We don't have any, you know, fully fleshed out smart papers, but they're in the works, I think, on a couple of different topics. So I'm excited to see where those those tools go in terms of, you know, opening up some of the repos and models because I think it's one thing to build a model. It's another thing to take a couple of models and plug them together and then simulate you know, like, here's conviction voting, here's quadratic funding. You know, what if we have quadratic conviction, voting cool, or it'll pull in something else, plug it together? What are the outputs of these kinds of systems? So I'm really excited to kind of continue forwarding those puzzle pieces, to allow people to sort of leapfrog rather than having to create a model from scratch. How do you just take you know, this one, this one, this one and plug it together, and then run it for 100 years and see what happens? You know, so I think there's a lot of gains in the token engineering space with tools like that coming down the pipe.

Lisa Wocken 18:51
Yeah, wonderful. Great. Yeah. And, again, thank you for listing the specific details. That's very helpful. Which areas of knowledge do you consider essential for the token engineering field?
Participant 29 19:10
Question? There? Probably so many. I mean, familiarity with engineering in general as like the social practice I think is important to think you know, anything regarding safety, whether that's like data, you know, data provenance or data ownership. Those kinds of things are gonna be really important. Sorry, could you repeat the question again? Did I already take your
Lisa Wocken 19:43
turn on that? No, you're spot on what areas of knowledge do you believe are like really critical to the token engineering field?
Participant 29 19:52
So I would say Yeah, anything on safety? And not that there's like particular safety engineering, but like graceful shutdown cascade failures, like we should be knowing where these things blow up. I think that's one of the most important things about engineering is knowing the bounds. So within these bounds, your system will operate safely outside of these bounds. We need to have mechanisms that push us back within those bounds. So it's kind of like a state space diagram. You have safe operating zone, you know, marginal operating zone and dangerous operating zone. So you want to have you know, if you get into the marginal zone, you want to have mechanisms that push you back into the safe so you restrict user actions or flow down you know, the the danger, the runaway danger, and that will push you back into the safe operating system. And if you continue down the sort of divergence to a dangerous upgrading space, then you initiate graceful shutdown, you know, there should be some way for these systems to basically, slowly or equitably stop without blowing up and hurting everybody involved. So I think that's one of the big areas that we need to focus complex systems engineering is actually a really good whole field. You know, anything with you know, feedback control, control systems, distributed control systems. I think those are really important fields to understand, you know, agent based modeling, data science, data analysis, all that stuff is sort of wrapped into that, but also kind of their own rabbit holes. Of course. you know, there's the the deeper sort of like formalization. That's where, you know, Michael's argument and Jamshid shoresh. And some of our deeper engineers are actually like, building these formalisms from the ground up, that requires a certain type of brain, but also, you know, very, very important, you know, the mathematical literacy and the ability to deal with, you know, abstract symbols and concepts. category theory would be an that's kind of that, you know, what does the math behind iterative games. Actually, I think {medica} have may have just launched a tool called something like that maybe iterative, $name$ or, but it's basically using these types of concepts to build more than just one shot game theory where it's you know, the matrix where you have you know, defect or, but having a system where not only the environment can update itself, but also the agents preferences can change. So you have moving from one shot game through you have iterated game, so game at t zero game at T one game at T two game at T three. And of course, the environment may change and the people may change and there may be more than just two agents as well. So tying all of that in, I think will be a sort of key part of of token engineering moving forward.
Lisa Wocken 21:31
There is,
Participant 29 22:56
Yeah, wonderful. Anything else or what else? I was just going to drop a link in here. About so one of the papers and articles on this is $name.$ So this is a paper by $name$ $name$. Basically trying to standardize and simplify the formalization. So moving to like apps or block diagrams. Actually, that's another $functional architectures$ are really helpful. Let me just drop this video as well. $name$ is an amazing communicator on a lot of these things. Here's a video from him. Talking about functional architectures of a toaster. Or he uses that as an example. And I think this is a really useful way to see sort of all of the inputs, all of the transformations and all of the outputs of a system and they use he does a really clear diagram of the functional architecture. Of a toaster. So your inputs are like, you know, electricity that's coming in, bread is coming in and a hand is coming in. So these are all your inputs to the toaster system, and the bread has to go into the slot and the electrical energy has to get converted into thermal energy. So you have you know, the resistors or whatever, then you have the hand come in and push the toaster down. And now the toast is toasting. So it was just a really interesting way to look at the architecture of a system through its functions. And then having all knowing all the inputs, knowing all the outputs and then combining them I feel like this will be a big area four sort of token design in the future and something that we're trying to push more into, in $name$ with the $name. $Wonderful.
Lisa Wocken 24:49
Great. Thank you so much for those resources. We're going to shift a little bit into challenges and needs. So what challenges have you faced in your work with token engineering? And what challenges do you think the field faces? Well, we can start with you personally.
Participant 29 25:07
Sure. I mean, one of the problems is it probably just doesn't have the clout or the recognition, like people often say, like token engineering slash tokenomics. And it's like, okay, well, what does tokenomics mean? And generally, that just means

like, Hey, here's a pie chart. This is how we're splitting the money. There's your tokenomics, or this is how we're splitting the token allocation. I'm like, wow, that is like that's the wrong question to be to be. I mean, sure. How are you going to split the budget of your community sure, is an important consideration, but it's not, you know, engineering the system. It's just a high level decision of how you want to split funds and generally made off of like, what looks good or what I don't know. So conflating those two, I think when people are just like, oh, token engineering, you know, like tokenomics, and it's like, it goes so much deeper than that. And it doesn't even necessarily pertain to blockchain systems. I think that's one of the big critiques$name$ had around calling it token engineering as opposed to I actually I don't know that he had a better alternative. But, you know, moving away from just tokens as the like object of focus. I think that's been another big challenge for the token engineering space is a lot of people put these tools like on a pedestal and think you know, like, okay, deploy a token given to people kind of collective intelligence. And it's like, oh, that didn't happen. You know, in any of these instances, you give people tokens, and either chaos ensues, or nothing ensues because no one wants to vote. So I think there's, you know, and of course, all understandable these are early days of this discipline. And I think it's got a long ways to go and a lot of use cases to test out on and prove itself, in terms of can this be done, you know, properly, responsibly, professionally, sustainably in the long run. The other other difficulty that I've run into is, you know, because it's such a new discipline where we have to build the tools while we go. So I mean, $name is still under development, $name$, which is, you know, $Cname$ as a cloud service, also still under development. It's also really hard to fund infrastructure for infrastructure. And we found that at the $name$ all the time, when we were going out to raise money to build some of these primitives, you know, grant agencies would be like, Okay, well, like, you know, this project is feeding hungry children. This project is housing, people, what are you doing? And we're like, oh, well, you know, our tools can be used for any of those things, but they're not currently being used for them because they're not built yet. And people are like, Okay, well, you know, that doesn't sound like you need our funding. And it's like, no, it really does. But it's really hard to get people to look that far down, sort of the infrastructure pipeline, and everyone thinks it's you know, someone else's responsibility to fund. So I mean, we've ended up with the model of finding clients who want to do build something that is in line with our research, so that they can pay us to research it and build it for them at the same time, but it ends up with a lot of distractions, you know, then you're doing what the client wants and not necessarily you know, what is best for the long term research. Also, another problem that token engineering spaces, everyone thinks it's easy. They want to hire a token engineer to design their whole system, without recognizing that that's actually probably a whole industry with like a pipeline of different firms, you know, you have groups like block science can do the formalization, maybe the modeling, you have groups like $name$, or, you know, pick any number that's out there that can potentially take those specs and deploy them. Then you have communities that can use them, test them, iterate them, etc. But you know, at today people are just like, yeah, it's a you know, it's a person retire and engineer and they can they can just do this and it's like, that's Yeah, way bigger job than we think today. But I think that's also just the nascentcy of the of the space. Any other difficulties

Lisa Wocken 29:08
or even common pitfalls that people might run into?

Participant 29 29:14
I'd have to say again, thinking it's easier than it is the, you know, even even the communication of these things. Often people kind of lumped together the work and then explaining the work and it's really two separate and huge chunks of work to create the design and then simplify it so much that you can explain it clearly with diagrams and you know, to a high enough level audience, which we've noticed as we work more with daos. When you work with a small team of, you know, engineers or executives on a thing, and everyone's in the loop, it's much easier, but we've been hired more and more by distributed communities, and then we have to explain that to everybody and justify that to everybody and it's just a ton more work on top of the ton of work it is to actually design and test and simulate. You know, explaining those things, bringing them to the audience in a language and diagrams that they can understand is a whole other scope of work. So definitely the oversimplification. Of all of the steps in the process, I think, has been a recurring theme for a lot of clients that I've worked with.

Lisa Wocken 30:26
And I guess the last follow up on challenges and needs are what do you believe are the most pressing needs right now?

Participant 29 30:32
Right. Would say infrastructure tools, education and sort of study. It's been great to see more sort of design firms popping up. There's like token engineering labs, there's curve labs, there's, you know, $name$ is someone I've been been chatting with and working with recently. So it's great to see more groups sort of narrowing in on this, this design space and trying to figure out where these groups kind of connect in a pipeline of, of work is, is quite interesting to me. Because it's too much for even one whole company, let alone you know, an individual engineer. I feel like there's sort of specializations in these in these pipelines. And it's the same for any other engineering discipline, right? You have the the firm that creates the circuit board, you have a different firm that tapes out you have a different firm that maybe tests it, or maybe that goes back to the first firm but anyway, you have a bunch of groups that are involved in sort of a extended design and testing and and deployment process. And we just don't have that sophistication yet and token engineering, but I think it's coming. Excited

about the direction it's gotten even in the past couple of years. Looking forward. It's like everything happened so slowly, but looking back, it's like, oh, it's been just a few years and all these things. are built, and it's really cool to see. Wonderful, thank you.

Lisa Wocken 32:11
So shifting gears now we have a couple of more specific questions about the token engineering field. And you've already touched on this notion of safety. And I'm curious if you can describe the role that you believe ethics plays in token engineering?

Participant 29 32:30
Yeah, I think that's actually tied into the core. You know, it was a first year course for us and engineering that you need to understand sort of the context in which these tools are being built. And of course, that's way more, I guess, combinatorial in a token ecosystem than, let's say, a bridge, you know, a bridge, you know, it's quite clear failure is you know, the bridge collapses success is the bridge stays up. We have, you know, expectations of the numbers of people that are going across it, it has to stand up to these kinds of wind forces and earthquake forces and whatever else. And we've also had, you know, history of 1000s of years building bridges figuring out when they fall down and improving our models updating our understandings to to test those things. So we have a long history of doing it, and it's relatively contained in terms of the number of variables and I mean, that's not saying there's a small number, because there are you know, these are massive design projects that are that are very complex, but I think once you get into the, you know, tokenize governance space or tokenize, anything space, what these tools will be used for down the line, we really don't know yet. So I think it's even more important and even more difficult to understand sort of the the guardrails or that breaks that we should put in these systems. And I think some of that, you know, comes at the primitive level that some of it also comes at the kind of system design level. So if some groups are putting out Legos, you know, it's really hard to say, you know, you can't take any tool and do bad with it, right. A hammer can be used to build a house or kill someone. So I think it's it's an important consideration at the system level in particular, you know, and checks and balances should definitely be be understood. I think data. Data Security is a really important consideration in the token engineering space.

Lisa Wocken 34:32
What if anything, would you say concerns you most ethically right now in the field?

Participant 29 34:41
The the over focus on shipping stuff in my mind and it's great to it's great to test at small scales, like we need to ship stuff, we need stuff to explode before we before we figure out how to fix it. So it's important to ship and test. But I think also we're, we're a few years ahead of ourselves in terms of like what we're promising people sometimes when I speak like that web three space in general, not necessarily token engineering, but you know, we sell people this vehicle that they can get in and drive from A to B, you know, but vehicles are actually really complex machines. We've just kind of put a hood over most of the complexity. But with web three, you know, the engine is still kind of in the middle of the driveway. There's a bunch of people tinkering with it. And you know, when people come by, and they're like, Hey, I've heard that this vehicle can get my community from A to B. But then they look at the engineers that are arguing over the combustion engine and they're like, why is this so so technical? You know, why is it so complicated? And it's mostly because the tools are tested yet they're not they're not in like production grade, at this point. So I would say that the thing that I find most concerning Is this, like, ship first ask questions later. And I think that's a dev mentality. It's a hacker mentality. It's a software engineering mentality because changes are so easy to make in software engineering that it makes sense to have rapid production cycles and then just fix it later. But with these things as digital public infrastructures, I think we need to just be careful with that mentality. Test at small scales, yes, but also treat them as small scale tests that you're going to learn from and then iterate once you find out what the issues are. It's not just, you know, deploy the smart contract, and then, oh, smart contracts are expensive to change. And audits are expensive. So like, Oh, this is our smart contract. Let's go Let's jam it into where we need to fit it. I think it's, yeah, there should be a testing iteration. And almost like the moratorium, what's the what was our post mortem on this tool? I haven't seen enough of that around the space yet doing rigorous data analysis, pulling out lessons from it, and then figuring out how we iterate these tools to incorporate those lessons and move forward without causing those same problems in the future.

Lisa Wocken 36:57
Wonderful things. So this next one is wondering if you have thoughts on how to increase diversity and inclusion within the token engineering field or engineering

Participant 29 37:10
in general. To be honest, my class at whatever there was like 90 Guys and six or seven girls. So I think there's there's a lot to be done there. How do we make these spaces safer for other voices? I think it's a it's a tricky challenge because you don't just want to go out and grab people because of their gender or because of their ethnicity and cram them into a space saying, you know, we need to even out this balance. I think we need to make it more safer, more inclusive for those people through actions rather or through sort of established process rather than you know, go and bring some girls into this group because we need more girls here. It's you know, that's kind of the wrong and putting the wrong emphasis on it. So actually, I think that

$name$ has done a good job. Of making that, you know, emphasizing the non technical aspects of the discipline. And I think that's brought a lot more discussion of the social aspects and the the, you know, ethics responsibility all of that over just hey, these are neat, like tech tools or math tools that we can play with, which traditionally at least seems to appeal more to you know, white dudes or Yeah, the traditional stem stereos stereotypes, but I think the Yeah, changing processes to make things safer and more inclusive rather than, you know, just dragging people in because of what gender or ethnicity they are. I'm not really a fan of that sort of like stalking the

Lisa Wocken 39:03

yeah, that's my train of thought. Yeah. Yeah. Don't worry. I'm picking up what you're putting down. So we still have a few more questions here. So I'm going to move us along to finances and I'm curious, what are the incentives to practicing token engineering? What are typical rewards or value that someone might receive from participating in the field?

Participant 29 39:32

I would say upskilling like learning education is probably the biggest. That's where you know most of the internal motivation comes from, you know, people who want to learn is this probably the biggest you know, we've had people come to $name$ just being like, I don't even want to get paid for that just worked with you guys. Because I want to like read everything you put out and I can help you put it out, by the way, and we were like, Okay, great. We can also pay you but people people show up because they want to learn and there's I think so much that can be done with these tools. People who are sort of seeing the long game and then figuring out kind of back propagating from there to we need to do this properly in the near term to facilitate all of the stuff we talked about in the long term. So I would say education is probably the biggest. What other incentives are there? I mean, of course, monetary. This is just kind of a fact of life like people need to get paid to to live. So finding sort of product market fit for some of these tools for you. Know, finding clients that are you know, looking for these types of tools but don't have the in house expertise to develop or design them themselves. Seems to be an incentive. So you know, education being number one, monetary being number two, I'd say tokens are a really interesting mechanism as well. You know, how that actually pans out? Is it you know, reputation tokens? Is it experience tokens? I think there's a lot of really interesting experiments. $name$, for example, has sort of a upskilling template so you can join a task or join a project see what tasks are available. opt to take on a task in sort of actually like what's the term like? Not a protege but Apprentice? Yes, that's the word I was looking for. So if you see like, Okay, I'm joining project A and project a there's task 12345. Okay, I see project or task five is product, UX or development or whatever. And I say to the person using them, you're doing that task. Hey, I see you're doing task five, which involves you know, all these things. I would like to carry out some of those. And if they say, yes, you have the requisite list of skills, you've done jobs like this in the past, and all of these things are represented by tokens, essentially, in the $name$ ecosystem. So the more jobs you do the more expertise you have, the higher the compensation you receive for carrying out a task. I think there's some really interesting sort of like upscaling incentives that we can get and I mean, people are doing this in various ways with NF T's or $name$ actually. I mean, the $name$. I think there's additional weights allocated if you've completed the courses, for example. So having like, not necessarily monetary token incentives, but like reputational token incentives. And I'm really interested in how that can scale not just within a group, but also between groups. And I'm not saying we are at that point yet, but once we have, you know, if there was, let's say, Dr. DAO, and that had some form of like, Doctor expertise tokens, you know, then you could query that group or just say, hey, that group, that group's opinions is valid here. Or maybe even close to that to the engineering you know, what if we had I triple E token? And everyone who is part of the$ IEEE$ or professional engineer, you know, has worked on this stuff for years. Cool. Let's just like pull their network in our network. They can now vote on our things. Here's our like, list of stuff that we think is important. Hey, engineers, like real world engineers, do you want to like weigh in on this, maybe your rankings would be different. So pulling in those sort of like reputational weightings from different groups into other even other groups would be would be super interesting.

Lisa Wocken 41:39

apprentice? Jeff, I'm going to ask you a question, if you don't mind on what do you think is the average salary for a token engineer currently

Participant 29 44:02

Good question. Or even a range? I mean, for the deep engineers like the $ name$ and the $name$ sheets and the $ name$ I mean if you're talking market rates, you know, I have no idea, I would say 200 to 300K a year. I don't It's hard salary because so many groups do this on a different sort of model. I mean, $name$ is one of the, you know, most high end probably token engineering groups, but a lot of others are just sort of doing it within their own ecosystem. So I've seen a lot of good token engineering come from, you know, devs who are supported by more or less grants or proposals from their groups and kind of aggregate a yearly salary for that might be you know, a lot of groups a lot of doubt groups are willing to work between you know, 20 and $50. Now, or even, like, you know, extremely skilled token engineers, but I think that, you know, also a combination of, you know, bear markets, dwindling down treasuries, and also this sort of like, hacker mentality, where I've seen some almost like hesitation to pay market rates, definite hesitation to pay market rates for this kind of design, because everyone's like, oh, we'll just, you know, crowdsource it. So, you know, $name$, for example, will be like, hey, we need a or $name$ might say, hey, we need a new token model. Let's just put it out to the network. And $name$ will

see that and be like, Hey, this is cool. We'd love to work on that. But we can't just take tokens, especially with a clause of like, you're not allowed to sell these tokens for 12 months and like there's all sorts of different there's there's a mismatch between how DAO's expect this work to happen and how like existing engineering groups work, you know, like, if $Bosch$ or any, you know, IBM or whoever, like a large corporation were to hire an engineering consulting firm there would be a large contract for, you know, people with decades of experience, I think Dows are still they seem a little naive, and that it's like, oh, well, there's people in the network who can do this. We'll just put it out. And you can get 10,000 tokens, but you can't sell those tokens and you know, you have to hold them for a year and all of a sudden it just makes that completely unviable for real engineering firm who has, you know, operational costs and everything else. So, I think there's still a bit of mismatch between what the web three space thinks token engineers are worth and what like engineering firms in the real world are like, No, we do this so your stuff doesn't blow up. Because it's gonna cost way more down the line if your stuff blows up. So just pay upfront to design it properly, and then deploy, but you know, it's a little bit different from the software engineering mentality.

Lisa Wocken 47:18
Wonderful, thank you so much. That's incredibly helpful. We're now going to turn to the last couple of questions focused on the future. What do you wish for the future of the field and how do you see the field in the next three years?

Participant 29 47:35
What was the first part of that against

Lisa Wocken 47:37
your wish? What do you wish for the field?

Participant 29 47:46
I would love to see successful iterations of tools. I would love to see broader adoption of those tools. I'd love to see like curriculums I mean, there's already sort of online curriculums from the $name$, and more. But, you know, having a token engineering course that you know, $name$ would be super cool. I mean, we're nowhere near that just because there's so much so I mean, scale, essentially and ended option which needs a lot of things. It needs tools, it needs education, it needs curriculum, it needs use cases, it needs good examples, and it's probably what under intervention, it needs, failures. And learning from those failures, so like, you know, having a explicitly designed sandbox test, even like sandbox didn't time. So we say okay, there's a group that's going to use this tool, they're gonna use it for six months, and after that, we're gonna figure out what they you know what they learned from that tool or how that tool needs to be adapted to fit their processes. Coming back to that token on a pedestal, I think we too often put the tool in front of the process, rather than figuring out the process and then creating the tool to fit that process. Or picking the tool to fit that process. We have a lot of sort of techno first and you know, that, Oh, we'll just use this tool, and then people will figure it out. But it doesn't seem to happen that way. And I think it causes a lot of UX issues to put the tool before the process. So having the Yeah, writing that I think would be a great way to facilitate the

Lisa Wocken 49:39
scaling and uptake of token engineering. Awesome. Thanks for sharing your wish. Is there anything you'd want to add in addition to that, regarding, you know, where do you see the field three years from now? Hopefully scaled up hopefully greater adoption. What if anything else, any specific developments or innovations? Yeah,

Participant 29 50:03
I guess I would love to see more funding flow to the deeper infrastructure. I think the deeper infrastructure is often what is funded least, you know, the user facing stuff doesn't seem to have a problem. I mean, you have business models around that $Facebook$ isn't does have a problem with capitalization, but you know, a lot of the open source building blocks that the web relies on or that $Facebook$ itself relies on are still horribly underfunded. So I'm, and I suspect that will be the same. I mean, it's the same everywhere, right? US infrastructure is crumbling, because they're never sufficient maintenance and operations budget. So I'm curious how token engineering can be sort of a flywheel for that. If if we can figure out these incentives, how do we push that revenue or that funding down to the lower layers through you know, potentially, token reputation systems through token you know, things like inverter protocol, you know, how do we get the funding it doesn't. We just need to be more responsive to the, to the experts at that deeper layer of infrastructure and if $ name$ had a flow of funds that we're just waiting on him to direct to like different areas. I think that would be amazing. Because he's so deep in the infrastructure. He sees what needs to be funded, but that's so invisible to you know, VCs who are up here who some of them want to solve problems legitimately, but they, you know, only solve that direct problems, which is often the symptom and not the structural issue. And I think some of the deeper structural issues will only be addressed if we have sufficient funding and time to dig into those. But most of the engineers, token engineers that I know are so busy with client work that they're they're thrashed, you know, clients want their token launched, and they want it last week, and you know, it needs to be done and it needs to be faster and it needs to be cheaper. And meanwhile, you know, the engineers are like, we're really trying to build this like foundational layer so that everyone can have a leg up, but it's very distracting. So you know, we've been pivoting a little bit from science focused work to more like longer, slower grants. But those also have, you know, much longer application, when like, it takes a long time to get them some of these government grants or $National Science

Foundation$ takes a long time. And yeah, there's there's other overheads I suppose, with that kind of process. So better fun streaming, if we can token engineer ourselves better. And I mean, that's, you know, a lot of what is being worked on bonding curves, conviction voting. Some of these things is basically like better resource allocation tools. I'm hopeful that we can, you know, sort of bootstrap itself to head in that sort of exponential direction, not exponential production or anything but exponential knowledge experience. You know, people that can pick up these tools and do this because it's not, you know, there's way more work to be done here than any any individual group or even group of firms can can manage.

Lisa Wocken 53:20

Wonderful, thank you. Very last question before we ask if there's anything else you'd like to share is whose work do you admire in the space and you've already been so gracious with so many of the people that you've already shared, but whose work do you admire in this space? And is there anybody you'd recommend to us that we talked to as part of this study?

Participant 29 53:41

Sir, you've probably got a bunch of a long list already. I mean, there's our guy who tried to kind of hey, $name$, actually, I think he's part of the study group. So $name$ should definitely be on that list. $name$. I can get some intros to any of these people if they're not already on the list. But those are some of the, you know, deep engineers with decades of experience in our group. Some of the other people that might be relevant. $name there was an early inspiration of mine. $name which I'm sure he's already on on the list. $name$, he I mean, he doesn't explicitly allied himself as a token engineer, but he is definitely a very well read and experienced guy with a lot of this kind of stuff running some very forward communities. $name$, from $name$ might be a good person to talk to. Again, doesn't really align with light himself with token engineering, per se, but the way that he works, the stuff that he's working on is 100% up the alley. You know, $name. I'm sure he's on the list already. You know, $name$, a lot of the people who've been building you know, the smart contracts and the work in the $name$ and $name$. $name$, if you can get a hold of him. He was you know, thinking actually, more than just deploying conviction voting. They're looking at, you know, sortition and a lot of other sort of primitives that can be stacked together and these kinds of systems. Um, who else name, now he doesn't like the word token. But he's definitely like, I mean, in terms of designing sort of sustainable systems, they have a huge emphasis on you know, biomimetics in the $name$. So our Brock would be an interesting person also incredibly busy and on the road more than half the time so he might be hard to track down but I definitely value and appreciate his insights. $name$, of $name$ I'm sure some of the $name$ folks are already on this. $name$. Hopefully he's on the list too. But definitely someone that I appreciate and look up to. Let me just have a quick flip through my contacts list here. Jeff, I was the person you mentioned that works with you guys. Jim, something you said he's Jamshid let me reach $name$ and I can get I'm pretty sure he's just name Let me find his email for you quickly in case you need it. Where's my email? There's since she has just come she asked charge research for you. Okay. That's an email for Jamshid and I'll pop him a quick message just so he knows to expect to reach out.

Lisa Wocken 57:29

And Jeff, just because I want to ensure that you have a space to ask any sort of questions or share any last thoughts that you might have? What if anything else as you think about our primary focus of what is token engineering? What if any other thoughts when you consider this interview are becoming more apparent to you now or do you feel compelled to share? Oh,

Participant 29 57:57

we did cover a whole lot in this call. I think yeah, the if there's one thing I can emphasize, it's the like sandbox iterative approach and being upfront about failures of these things. Because I think that that is how science progresses. When we learn what doesn't work, right? Something worked great. Was it because of this or was it because of something else? We don't really know. But when something failed, it's like you know, we have a good signal that there's something wrong here that we need to to address so I think being more worried about failures rather than and you know, this happens everywhere, because people like succeeding more than failing, but I think we learn a lot as a discipline when we fail and when we learn what causes the failure, and then we can build that into future models to prevent those failures. I think that's one of the most important ways that knowledge progresses. So being like upfront and forthright and doing these sort of like, you know, sandbox tests post mortem, what worked, what didn't, how do we address that in the future? I feel like if there's a growing toolkit of primitives, I would love to see that kind of progression. From like, you know, v1 to v2 to v3 with sort of, you know, highlights of what worked, what didn't and how are we addressing those moving forward? That would be huge in the token engineering space.

Lisa Wocken 59:19

Great. Well, Jeff, we're at time but thank you so much for your graciousness, and giving us so much of your time and insights and details and thoughts. It was so wonderful to meet you. And just by participating in the study. You'll be one of the first people to see the findings report where we consolidate all these great insights together and we just can't thank you enough. If we have any questions, we'll follow up. But if you have any questions, please don't hesitate to follow up with us.

Participant 29 59:48

Cool, sounds great. And I'll follow up with a message to Jamshid Was there anyone else that I that I mentioned that wasn't already on your list? I'm happy to send a couple of messages to folks to expect to reach out. Yeah, I think Luke wasn't in our list. Also $name$. $name$, I think you mentioned also an $name$ is name from a $name$? Person? Yes. Yep, he is. I can

send you a message to follow up. That would be super helpful if you share some context with us. Yeah, definitely happy to link a couple of folks or let them know to expect an email. Cool. It was lovely to have you. Yeah, good chatting with you guys.
Lisa Wocken 1:00:36
Yeah, thanks, Jeff.
Participant 29 1:00:37
My favorite topics.
Lisa Wocken 1:00:40
Your passion is contagious, by the way I can tell you well suited for what you do.
Participant 29 1:00:45
Cool. Hopefully, hopefully it turns into something other than just a bunch of, you know, experiments in new technologies, while AI eats the world. Yeah. Yeah. How do we integrate AI into this process? That's probably one of the existential things as well. You know, I'm looking forward is how do we and I know that those discussions are already sort of in the works. So glad that we're, you know, staying on top of that, because it could a greatly facilitate or be completely derail stop these processes. So that we're already on that. On that thought train.
Lisa Wocken 1:01:22
Yeah, yeah. I love that. Somebody mentioned the idea that token engineers really are in many ways positioned best to be the puppeteer. of AI in a lot of ways. Yeah. So I think that's fascinating. There's, there's lots of interconnectivity there, they'll they'll run in parallel.
Participant 29 1:01:39
Yeah, for sure. I mean, these tools have such great potential for liberation. They also have amazing potential for oppression. So we need to be really careful about you know, and it's that arms race is already going on, you know, it's not whether we do anything or not the directions that we will try to use them for those purposes. So we need to figure out how to, and it's a tough balance because, you know, making everything open isn't necessarily the answer, because then you're potentially just teaching people how they can, you know, manipulate and take over these these tools for their own ends. So I think safety again, is one of the biggest things that we need to consider in the long run.
Lisa Wocken 1:02:20
All right, well, thanks again so much, I know Livia will be in touch with you and it's been a sincere joy. Thank you so much.
Participant 29 1:02:28
Oh, yeah. Great chatting with you guys. Bye, everyone. Good luck with the rest of the interviews, too. Later. I also have to jump for another call.