

(cleaned) Participant 39 and TE Study

Nathalia Scherer 0:37

All right. So can you start by sharing a little bit about your your personal journey and how you got involved with your field of work?

participant 39 2:28

Yes, so I work at the \$name\$ as a protocol designer, mostly looking at mechanism design. I started at the EF three and a half years ago. And before that, I was doing a PhD in \$game theory\$, \$algorithmic game theory\$ actually, and just got interested in \$blockchains\$ started seeing that there were some parallels between what I was thinking about in my PhD and the problems that blockchains had like congestion or mechanism design. So yeah, got interested, started working at EF and have been active on some of the Ethereum protocol upgrades since I joined

Nathalia Scherer 3:16

and how do you see your role in token engineering and anything in specific that got you motivated to get involved in this and maybe starting to study Game Theory?

participant 39 3:33

Yeah, I mean, game theory was interesting to me, because it gave me I would say, better mental models to think about systems that like I was always interested in how cities work, how people collaborate, how companies form like different forms of organization, but then it didn't really have a language to talk about any of these so when I learned about game theory, and when I got more interested in that, it was kind of a bit like a mind blowing Eureka moment, and when, when the systems that i tend to like they're the ones that are more open and we the ones that are more participative, and so blockchain to me was okay, if I'm going to be doing this game theory stuff, most people who do what I do, we would end up at Facebook or Google selling ads for making money for the platform. But what I was really interested in was the design of the platform itself and try to make it as open and participative as possible.

Nathalia Scherer 4:33

Awesome, thank you. And how would you define token engineering?

participant 39 4:41

And that's a question that comes up sometimes I actually don't consider myself a token engineer, because I don't think I spend so much time thinking through the economic flows of the ethereum token. So we design mechanisms in protocol that kind of change the dynamics of the token. For instance, when we did the \$nam\$ fee market now you have the token is getting burned. And so if I was a token engineer, I think I would spend time thinking through Oh, do we need the burn, how much insurance do we need such kinds of things, and I do spend some time asking myself these questions. But I see myself more as a as a mechanism designer. So I'm trying to think through the mechanism itself but the parameterization of it, or how people decide

to deploy it is maybe something im not concerned with as much so it's adjacent but not directly what I'm doing.

Nathalia Scherer 5:48

And speaking of that, and what you're directly doing. Can you share a little more about your daily work, the kinds of tasks that you work on? And also maybe the kinds of tools that you generally use?

participant 39 6:06

So we don't consider the Ethereum protocol to be finished. There's always been a backlog of upgrades so for instance, the EIP 1559 upgrade was to change with the fee market and change the way that congestion is priced on the network. When I was working on this, my daily job would be to model the mechanism try to formally prove some of its properties like does it is it efficient? Is it incentive compatible? So I'm asking myself questions that I would say are framed by the field of algorithmic game theory for EIP 1559 Specifically, I started doing some simulations. So I actually programmed agent based models so that we would see okay, now the model is running, we trying to understand if the mechanism was to be deployed, what would be the outcomes and do they match the kind of theory that we that we worked up for that and then once the mechanism is deployed, i generally also spend time looking at the data. So just the empirical results of the mechanism so we would do things like back testing, to see if it had achieved the objectives, not just in theory, but also in practice. So yeah, i would split my kind of methods along these three axes. So empirical work, simulations and formula analysis.

Nathalia Scherer 7:41

Any specific tools that you use for that?

participant 39 7:45

So when I was doing simulations I was using \$CADCAD\$, which was at the time starting to pick up some steam and there was some interest for it in the token engineering community and also in the larger blockchain and systems design communities. So I was I was using that for the simulations. I was in touch with some of the people who were building it. I have not used it for a while, but it's mostly because I have not done simulations for for some time, like if I was doing empirical data analysis, I would be using things like R? or Python, just simple scripts to get the answers that I that I wanted. Otherwise Yeah, the tools of research, which is just making papers, writing models in Latech?. Yeah, nothing, nothing too fancy, I would expect.

Nathalia Scherer 8:46

Thank you. And when we look at what you consider the field of token engineering, what would you say that it is solving that other fields are not?

participant 39 9:05

So I think it's it feels like very unique to the kind of systems that we're in. It's usually not the case that you can start up your own currency or your own unit of value and and use that to bootstrap a group or a network. So to me, token engineering is the science of creating like these units of

value and, and working out the ways that these tokens can be exchanged and can be given value or keeping that value over time. And what I think it tries to solve more uniquely than other things is the sustainability of a system like it tries to do that in a way that promotes good outcomes, such as the token is not concentrated in the hands of just a few people and the token is has some kind of utility that that people Yeah, that that make that there is a demand for it. So I would, I would think of token engineering as you're trying to develop these units of currency or units of value in systems that are permissionless, where anybody can build other mechanisms that use the token as a as an input or output token, use, deploy other things, maybe even over tokens that interact with the first one. And so yeah, how do you build economic systems that that are underpinned by this unit of value that lives in a broader environment, a bit vague i guess but....

Nathalia Scherer 10:58

no, that's great. So what areas of knowledge do you think are important for that?

participant 39 11:10

So yeah, that's probably a bias but I would say for sure mechanism design because you, you often see token plans that rely on when this happens, this person is incentivized to come and liquidate, the account that person because we're getting a reward etc. So the idea that you start from an outcome that you want to promote in your economy and then you reverse engineer the mechanisms that that are supposed to make that happen. I think that field is very important to have the correct vocabulary to talk about incentives to talk about what the behavior of people should be or what the dynamics of the systems will be. Another thing is probably a systems design or these ideas on how do things compose when you have different systems that have different states and that are interacting with one another. mechanism design typically considers these things a bit in isolation, but now that we're looking at more permissionless systems I see more work that tries to make arguments about the composition of different mechanisms, rather than just looking at the mechanism on its own. And then I would also argue that you need more intangible or more qualitative fields of study like sociology, if you want to understand what are the outcomes that you that you want to achieve and why these outcomes might be good or beneficial. What are the ways that you see with society that will be induced by the mechanisms that you put in place, if you want to understand the structure, and if you want to ensure that the sustainability is not just economic, but also that there's a kind of community that builds around this? I would want, Yeah, I would want people to not just think like everyone is a robot and also think through the ways that people organize themselves as humans.

Nathalia Scherer 13:20

Yes. I'm grateful for that answer. And now going more towards challenges and needs, of the space. Can you tell us a little more about what challenges you have faced when working in this field and maybe also common pitfalls.

participant 39 13:42

Its both a challenge, I guess, and an opportunity but the fact that these systems are permissionless and anyone can start their token means that there's a lot of innovation which that

part is good, but one thing that's changing is that there's not really a common language sometimes. So I might, I might understand the system fairly well. But when I look at different dapps that somebody launched, I have to unpack their own terminology for things that actually maybe map exactly one to one with the with the thing already understand. So there are common patterns that we see like minting, burning, opening vote liquidations, but I find that when I try to understand how different systems work they tend to have our own ways of talking about things and there is not really like a common language between the different kinds of token designs or token primitives that exist. And it requires then a bit more work to unpack if there's wherever novelty is like I think often people do that because they want to say oh, we have this new feature that is like exciting and we call it like this thing. But when you unpack the feature itself is a lot of things that already exist. And maybe one variation that that creates that that difference.

But I do find that it takes a while to go through the different white papers of dapps or projects that that make claims about the systems that they want to build, et cetera. And one example for instance is Tera? so it was pretty clear to most practitioners. But yeah, when you when you just unravel the sequence, the mechanism is actually fairly simple. It's just a feedback controller that tries to stabilize something. And when you understand these terms, then it's a bit easier to see that if you push it out of equilibrium enough, it will see or curl and spiral and become chaotic. That's like the death spiral. And and when you read the white paper, there was no element that was leading you to that conclusion. It was more I don't remember the exact terms that were using but yeah, there was like some fishing and we reinforcing the position. Yeah, and it did not give you like a good mental model of what actually was, was going on. So sometimes, yeah, that lack of common way of expressing things that are similar, does create innovation, but it does create challenges to to understand what's going on.

Nathalia Scherer 16:37

Yeah, definitely. And also around that, do you see any other specific needs? Or, or even what do you think is the most pressing need in the space right now?

participant 39 16:57

Maybe like there's two points. One is more technical. I do think like a tool like CADCAD is is helpful. And I have not used it for for some time. So I am going to build some caveats on this. But back when I was using it, it was a bit rough. There was some documentation missing, it was clear that it was suitable for for the task that that it purported to do, where it was maybe not like finished, and I think we have you improved on it, but I just haven't kept track. So yeah, there should be a way to build and test and simulate these these pipelines that should be as easy and as standardized as, for instance, ml pipelines are nowadays where, yeah, people understand. They don't have to understand like the whole architecture, but if you tell them its a neural network piping into a transformer piping into this, like they kind of get it. And so building these primitives from like a programmatic perspective, I think that would be a need. So that yeah, maybe it also helps to standardize the language that people are using. And then the second thing would be probably more academic literature on just like common patterns and results because you do hear a lot the words like incentives and rewards and this works and if it doesn't work, and there's usually not a proof, it's more just, oh, we'll give you money if you do this. So

that means our system is stable or incentive compatible. So there's there's usually a confusion between the claim and actually the, the truth of that claim. So yeah, more firepower in terms of having applicable results that people can think of as black boxes to understand these white papers. And intagra? claims I think would be needed.

Nathalia Scherer 18:57

And how about ethics? How would you define the role of ethics in token engineering. And do you have any ethical concerns around it?

participant 39 19:11

Yes, so I guess again, two levels, maybe there's one which is token engineering in the sense of designing economies. An ethical perspective would be for me, at least and something I try to spend time thinking about in for our protocol, is the idea that you want to minimize rents as much as possible like you, you want a system that runs and that provides the most surplus to the most users and that cannot be captured and cannot be extracted from, in a sense. And so yeah, if you're if your token design manages to create a place of privilege in the system, well, the operator is able to extract money. I think that's that's a problem. I don't exactly know if it's ethics but but I would think that it does to some extent, because you it should be an ethical principle to build system in such a way that positions of privilege, either temporary or bounded and have that whomever occupies it cannot exploit that position. That's one and then the second one is more about the definition of the of the outcome that you want to promote. You can create probably token economies that underpin a system of assassination contracts or bad outcomes like you there are ways to, especially since these systems are permissionless, there are ways to just put money in a box and that box pays automatically if some outcome is realized. But the outcome, the division of outcome can be anything from the boxes perspective and then I think ethical concerns are more preoccupying when you when you start realizing oh, I'm gonna actually be the one designing the box but people could be using the box to to implement outcomes that are very bad or very unethical or against what I believe in. So I do think the role of ethics is important and potentially overlooked.

Nathalia Scherer 21:29

It's been great to hear that from, from everyone we've interviewed so far. And it seems that the the role of ethics is present in people's mind. And I also wonder if you have any thoughts on how to include or how to increase diversity within the space?

participant 39 21:59

Yeah, this is a hard question and one that I guess we face generally because we, when I look at my colleagues like we tend to come from similar backgrounds and, and have similar faces. But we do try to increase diversity by providing grants and trying to target places that maybe are less or more out of reach. It's still hard we rely quite a bit on other people's work for for that, especially. We're not the most front facing entity in the in the in this space. I think people who have more maybe have a business intent tend to speak to more people or try to go to different places. But we are more like a back end of people doing research. So we also tend to work a lot via co optation Because you have your circles of people. Yeah, so we rely a bit on the input of

other companies or other entities that have done the work of trying to figure out where the where there is, yeah, people that are under reached and, and and go from there. So we have a main tool I would say it's probably grants and just trying to be as diverse as possible with with the grants that we give, while also taking into account that we also need to get some of the outcomes of the grants that are that are realized and so training of that.

Nathalia Scherer 23:44

Okay. And now going towards finances and we're trying to look at since it's such a broad field to like the definition is broad, just getting started. People have been having a hard time defining also like the financial situation of it. So what would you say are the incentives first of all the incentives for practicing token engineering and then like the typical rewards in terms of like both value and form

participant 39 24:28

Sorry, what was the first one

Nathalia Scherer 24:32

what are the incentives?

participant 39 24:35

Okay. I mean, I guess for me, I was mostly interested in the problem, and that was probably the incentive that drew me the most was to be able to do the research that I'm doing in the company of the people that I'm doing it with, and without having to worry about financial condition or the, let's say, precarity of my of my job, which can be the case in more traditional academic settings that it's harder to find positions. There's a lot of competition. So what I traded off, I would say is probably what I'm doing now is more risky to some extent, because this whole space could collapse at any moment's notice. but it also means that it's a bit less crowded, and it's easier to make a large impact if you're just willing to come in. And so yeah, the incentive was to just do what I do and and do it in good conditions then in terms of value so we have founded name which is a foundation, so they are not making any revenue. they are just addressing intent on doing the most research possible and getting research out. So that's, I would say a very comfortable position. Yeah, but it's maybe a bit unique in the in the token engineering space and what I see mostly from my position and I talk with some people who run let's say, boutique, consulting shops for for projects and for them it's it's much more cut throat because I think they're still, were still at a point where the demand for search expertise is a little higher, maybe than the supply so they tend to be able to almost be picky about the projects that we pick, at least the ones that I've talked to and on the on the supply side, it often looks like you have a Dao which just did like a token raise. And we have a lot of money in the treasury and they are trying to figure out how to spend it intelligently. So it's Yeah, finding people who who will do good work for you is actually in very in very short supply in my in my opinion. So yeah, the incentive for these people who are more into boutique token engineering shops is probably not monetary but but I also see that they enjoy that that work quite a lot.

Nathalia Scherer 27:19

Yeah. And what would you say is an average salary

participant 39 27:24

of a token engineering like US terms or?

Nathalia Scherer 27:30

Yeah,

participant 39 27:33

I would say I don't know the yearly between 100 and 150k.

Nathalia Scherer 27:42

And now looking towards the future. What do you wish for the future of token engineering and how do you see the field in the next three years?

participant 39 27:53

And I hope that we keep bringing in more people. I think what we're seeing is when people used to interact with, let's say, web two platforms, and applications you don't really need to think a lot about your information space or your action space. Because things are just given to you by the platform, the platform decide how your feed gets curated, decide what we show you what ads etc. With the systems we are trying to build we're trying to tell people No actually, you have a lot of power to decide the actions that you take with respect to the platform, like you, you're the one who has the signing key in your in your wallet. So you should be considerate about the things that you interact with and and it's both a lot of power, but also a bit of responsibility. And so, how that impacts the field of token engineering is I think, we need more people to figure out, you know, like if if the users of a platform have ultimate power and complete creativity in terms of how they want to interact with your platform, like we're going to need a lot of people to figure out what the user experience looks like, what the good mechanism looks like. And so I do expect that the field keeps growing on that basis. Also because there's a lot of just financial opportunity. So when you when you're considering that if if I'm working if I want to understand like Facebook or something, Facebook just swallows the whole the whole money of the ads or of a system of the user data etc. So so there's not really room for people to come in. Of course, you have like companies that maybe help other companies optimize their data, or their ads, beads, etc. But but it's fairly small, but now you're saying the platform that we're all living in it. It doesn't actually touch most of that money. All of that surplus is still is still on the table, either for the users to keep or for people who help the users to to keep it and so now you're really blowing up the room for for these types of entities or these types of designers to come in and and try to fill the gaps that are left by the platform intentionally.

So yeah, I hope it grows. Because I think there's a lot of work to do.

Nathalia Scherer 30:31

For sure. And as AI continues to advance, how do you see as the potential impact of AI in the field, token engineering

participant 39 30:49

probably does quite a bit. It's not something I spent too much time thinking about. But, for instance, AI is very good at figuring out the correct policy given a very large space of actions. So again, if I'm a user on Facebook or on Twitter, I don't have a lot of choice. I just I can choose if my feed prints chronologically, or if it prints according to Facebook, approved let's say order. Now if I'm interacting with the protocol, there's a mass of data behind me and there are many ways that I can interact with that data. And so we expect people to use AI to figure out how do you bring the user to the thing that they actually need? Because now we have all these buttons that they can push we have all these different actions that they can take. You still want the user experience to be manageable. But you also don't want them to be locked in to bad outcomes because the space is too complex to understand. So in my opinion, the only way to kind of make sense of that complexity and to make it manageable from like a human perspective is to do most of the cognitive work is done by the AI and the AI kind of hopefully works for you but but I think given a competitive enough market and even mechanism designers who are building these things, with AI at the back, competing with one another, I would expect potentially better outcomes to be realized. So yeah, the AI would be more like a tool to help people navigate the complexity of protocol interaction.

Nathalia Scherer 32:44

For sure. And we're coming close to the end of the interview. And something that I forgot to ask earlier is, if you look at a spectrum of either projects that have directly worked with, or that were around you, within token engineering, would you able to point to two different ones that you would consider polar opposites or that are very, very different from each other? Why

participant 39 33:30

should i be thinking about token engineers or dapps or

Nathalia Scherer 33:38

projects that include token engineering within them. That has that have a level of token engineering

participant 39 33:56

Yeah, I mean, so in the in Ethereum, now like we have these rollups which are basically side side chains that are secured by Ethereum. And these chains can have their own tokens. And I think there's that it was kind of promoted by by the designers of Ethereum that okay, you can have, you don't have to be like tied to main chain, you can do your own thing and especially you can have your own token and we're seeing now, I think differences in the way that people understand the utility of the token in the system. So for instance, you can have chains roll ups like, like Starkware? that seems to be they have a token which we think of it really as a way to accrue value for the for the holders of the token. So they think of themselves as a as a traditional company that people can invest in by buying the token and the token is sort of powering that that economy. And so if you want to capture the upside of this Starknet platform, you're going to want to hold as many stark tokens as possible. And when you have other rollups

that are even considering not having their own token in a sense to where they're almost like a trivial instantiation of a token engineer where they say, we actually want our own token, we think of our platform as a direct extension of the of Ethereum protocol. And so that means we token that we should use should be the ethereum token and that creates less friction for the user. And for us, we don't think of ourselves as a, as a company that is trying to capture any kind of website, we just really think of ourselves as building this infrastructure that that directly extends the protocol and one of these rollups for instance, is scroll I think so it's hard to say because we haven't also didn't launch a token yet, but but in their communications, they seem to imply heavily that they don't want themselves to capture any kind of outcome on the platform. So we, I guess they will release something eventually because it does help at the beginning. But they think of their token more as a way of bringing in users rather than as a way of capturing any kind of value that the value system creates. And so there's a lot of similarities still between these two projects, because they are both roll ups. So they have somewhat the same concerns. But on that specific axis, I would think of them as as polar opposites and, and somewhat Yeah, like archetypes of the profiles that we're now seeing around this

Nathalia Scherer 36:53

and do you have anything that keeps you up at night? And like when thinking about the field and the space future of it. Yeah.

participant 39 37:11

I'm always, I guess, I don't know if it keeps me up at night very differently makes me wake up in the morning is the the fear that we don't get to make the argument that this is all shut down before we can make the claim that I think we're trying to make so we're trying to claim that okay, the systems we're building are better, but at the same time, it's very clear that there's so much scam and so much terrible projects that are built on infrastructure and towards it It's abused because it's part of the game we're saying, Oh, it's permissionless and and even these terrible systems, sometimes they innovate in interesting ways, like they take a mechanism that could be used for good and they just turn it into the evil twin version of that. And so yeah, to me, there's always a fear that we don't get to show the actual value of these things. By the time that people are I was they stopped paying attention or they just decide to ban it. Which they wont ban it because you can't ban the thing itself but they can just make it very difficult for anyone to touch it with a 10 foot pole. So yeah, that's to me is the main worries is that I don't get to tell people why this is actually cool, and I don't and there's nothing to show for it until sometime and when we have something

Nathalia Scherer 38:37

I can definitely relate to that. And now really towards the end. What's what's inspiring to you in the field now, also looking at specific people and projects that you admire in the space. I mean,

participant 39 39:05

I get a lot of inspiration from other projects, and I try to keep my head out of the ethereum bubble as much as possible and I am I tend to appreciate when there's more heterogeneity in the way that people do things. So yeah, I am inspired by people, sometimes making the

opposite argument or building the opposite system as the one we're building. So one community I am interested in is Cosmos, for instance. And I think they we have set of rules of the game quite early on to say we don't actually care about the one chain to rule them all. Like we just want to build systems that play nicely with one another. And I think, yeah, we when you look at the the ethereum roadmap, there's a lot of things that shifted, and probably shifted also because there was this competition on the on the other side of good ideas that people were coming up with. And so yeah, what's inspiring to me is mostly when I see something that is the opposite of what I'm doing, and I still find it cool. Oh, that's actually that's a nice way of solving that problem or going on this and Yeah. Should I mention the actual people?

Nathalia Scherer 40:28

Yes. If you'd like that, that'd be great.

participant 39 40:32

Good, that's harder.

Nathalia Scherer 40:35

No need to do it just comes to mind. Then great.

participant 39 40:41

Yeah, I would say projects may be the answer we get in cosmos and yes. So in in etherium, we have flashbots that is doing quite a lot of research that we're also engaging with. And I find this interesting and when in Cosmos you have Skip, which is kind of flashbots of cosmos and they are doing things quite differently and with different assumptions and sort of a different take. So comparing the two together is kind of interesting to me. \$name\$ is not Yeah, it's not a fork of \$etherium\$. But they use the exact same infrastructure, but they're just doing things a bit differently. And so it's almost like this natural experiment of seeing how one is doing this vs the other. Yep. So that's kind of what's my mind.

Nathalia Scherer 41:35

And lastly, we continue to look for people to interview. Do you have any recommendations of other folks we should interview and we're looking at the field of token engineering, so it can be people working on different parts of it. Yeah, any anyone's specific comes to mind.

participant 39 42:03

I mean, I've met some I've met \$Lisa tan\$, she's in Singapore, and she's well known at this point. There are people in the rollups that maybe are thinking about these questions as well, in terms of the tokens. Yeah. Like one name comes to mind immediately.

Nathalia Scherer 42:35

That's okay to

participant 39 42:38

the police.

Nathalia Scherer 42:41

Or even people in your team as well.

participant 39 42:46

Yeah, I mean, I could definitely like tell them about it.

Nathalia Scherer 42:53

Yeah, and let's see, I think that's it. Is there anything that I didn't ask or anything else that you would like to add to the study?

participant 39 43:07

I was going to wait for it was more than I usually talk about these things as well.

Nathalia Scherer 43:13

Thank you so much for Yeah, for doing it. This is yeah, like there's no study that has been done yet on on this. So we're very excited and grateful. And as you've been a part of the study, you're also going to be one of the first ones to receive the report as soon as we have it. And at some point, we might need to reach out if we have any questions or like early insights. Is that okay? For us to do and reach out again. So, yeah, that's it. Thanks again. Have a great day.

participant 39 43:57

All the best for the study.

Nathalia Scherer 43:59

Thanks. Bye bye.

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