

diffusetap
Virtual Event Series

Decentralized AI is Better AI

Guest Speakers:



Jeff Turner
Adjunct Professor
Chapman University



Kate Lynch
Co-Founder & CEO
NeoSpace

Hosts:



Kenny Estes
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DiffuseTap: Decentralized AI is Better AI

Last time on DiffuseTap, Jeff Turner, Adjunct Professor at Chapman University, and Kate Lynch, Co-Founder and CEO at NeoSpace, talked to us about the problem with how companies are using the internet to train their AI, how much of cutting-edge science is based on differing opinions rather than established facts, and how decentralized AI can accelerate innovation.

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Meet the Speakers



JEFF TURNER is Co-Founder and CTO of the Big IE, a sovereign AI platform, an adjunct professor of computer science at Chapman University and a crypto advocate since the mid-2000s. He was also a tech executive at [Novell & Cisco Systems](#).

Linkedin: [@decentralizeai](#)



KATE LYNCH is the Co-Founder and CEO of NeoSpace, a company that builds spacecraft. She is a deep tech entrepreneur focused on the convergence of varying fields of technology, optimization of people and systems, leadership, negotiation, and finance. She is co-organizer of [Crypto Mondays LA](#) and co-creator of the FFC.

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KENNY ESTES: Over to the people you want to hear from today, Mr. Turner and Ms. Lynch. Jeff, thank you for coming. Do you want to start and tell the good folks a little bit about your background and what you're up to?

JEFF TURNER: You bet. My name is Jeff Turner. I have been into crypto and blockchain technology now for, gosh, 12 or 13 years. I originally got into Bitcoin after receiving my first Bitcoin at 40 cents, when the EEE was distributing it back in 2011 or 2012, as I recall. I teach at Chapman University as an adjunct professor in the computer science group. I have been teaching AI and Bitcoin and blockchain programming classes. I did that last year.

My current focus in teaching is on AI, using large language models and transformers with something called formal methods. It's a new way of writing code. I shouldn't say a new way, it's an old way of writing code that has been made economical by AI. We are getting into a lot of the deepmap now to better figure out some of this stuff.

I'm also involved with Kate. We are creating a new project that can use these approaches to make better use of AI. In addition to that, I sit on a few boards. In fact, I was just invited to join the second crypto PAC as an executive director. A political action committee focused on crypto. You will see more of that announcement probably next week. You can track me on my LinkedIn profile @[decentralizeai](#). It's pretty easy to remember.

KENNY: I love it. And Kate, before you go, we do want to point out that Kate is joining the hallowed ranks of a repeat DiffuseTap speaker, so welcome. There are not that many of those floating around, so welcome, welcome.

KATE LYNCH: Oh, thank you so much, Kenny and Ayla for having me. My obsession is, who owns the future? Who builds the future? Is that a future I want to be a part of? And if not, then I need to help build out the future that I want to live in.

And part of that is deeply centered around how we can still have sovereignty in what appears to be an increasingly centralized and surveillanced capitalist model, where Apple can take the code from any app and do it themselves in-house.

How can we have this beautiful future where innovators have control and can succeed, and we can have access to human-enabling technologies now, and maybe steer away from the more enslaving technologies?

We want to build a world where it's not to the lowest common denominator, which is the rat brain, that goes "click, click, click". But how can we enable each other to be superhuman? Some of you know that I am also in a space company, which is also focused on sovereignty and dramatically dropping the cost



and enabling people to purchase spaceships and all of that. On AI and blockchain, Jeff and I have had synergy for quite some time.

Some of you have been to my [CryptoMondays](#) group in Los Angeles, where Jeff has been a speaker. We are really focusing on how you create this sovereign compositional AI that is transparent, that cites sources, and that is not censored. Because right now, when we use large language models, so much of the government is also involved in how they train it.

And with science, it's really important because scientists sometimes think different things are correct. If you really believe that [string theory](#) is bullshit, you should not have that in your models. You need to be empowered to weight your science, to innovate, and to utilize decentralized computers to sequester your data.

There is this beautiful marriage with blockchain and AI, and this new type of mathematics that will enable a future where we can have some semblance of privacy while we innovate, so it doesn't just go back to the big companies.

KENNY: Okay, let's jump right into there. These AI models are doing things that are interesting to varying degrees, depending on which model in particular. You talked about the inputs. Can you expand a little bit on that? What does that mean? I don't know, it's model training stuff. I can't really pick and choose the paradigm. But what does that actually look like from a practical perspective? And maybe Jeff, since you unmuted, we can start with you and then bounce back over to Kate.

JEFF: Yeah, sure. Today, the way these AI foundation models work, especially the ones that are being trained to help you code, is they go out to access a whole bunch of public code primarily on places like [GitHub](#), which is a big repository where a bunch of open source developers contribute.

There is nobody who is actually rewarded for the contributions that they make in training the models. And in fact, there is a bunch of crappy code there in many cases. So, there has to be a heavy focus on curating the data and making sure that it meets the requirements for the training process. For the most part, companies like [OpenAI](#) have to go and do that.

Blockchain technology and decentralized tech in particular provide us with a whole bunch of opportunities. I think Kate touched on these, but one of them is that you can sequester or isolate the data, so that it can be trained in a more hermetic approach, meaning that you can isolate who can use the new AI or the trained AI from the data that is used there.

You can also federate the data, there are entirely new business models that can be put forward so that you can have different subsets of engineers working on different things like Kate mentioned with people not wanting to use string theory. This can be applied just as equally well to physics as it could be to coding.



In addition, there are new techniques that are emerging with Blockchain tech to do things like verification, or verifiable inference. What this means is that when somebody actually goes to query the API to get an answer, you can actually be assured that the computing systems did what they were supposed to do, because they are running on a mutable service layer, like the blockchain, to do that. I hope that's not too technical, but I'll hand it over to you, Kate.

KATE: Okay. To simplify, garbage in, garbage out. There are a lot of problems already. One, if we are even thinking about data labeling, who is labeling this data? Who is building the AI? And not that it's not great to have this type of person building AI and labeling data, but it's not skewed, again, towards everyone's viewpoint and everyone's experience in the world. If we want an AI that is truly suitable for everyone to innovate and for honesty and transparency, you also need people like women involved.

And you also need to think about, when you have such a marriage between big tech and some of these companies, as we saw with the Twitter files, then you start to wonder, well, what type of agendas are there? For example, a couple of weeks ago, Jeff and I asked ChatGPT a question. It gave an answer, and then gave a very political response about what the truth was. That's the problem.

The problem is, one, what they are choosing to be trained on does not allow for different viewpoints on how the world should exist, or how you should innovate. There is a truth that they're giving, but also, the internet. What is the internet? It's great. Full of cat videos, full of great stuff. But also, full of incorrect information.

I think there has to be a way where people can easily, without using a complicated interface, without code, or any knowledge of how to code, simply build something for themselves that gets the answers that they are looking for, especially within science.

I'm not looking to censor people, and I don't want to be censored. In all my companies, everyone has different politics, and that is fine. We all allow people to have that space because we get to a better answer. If this future right now includes "garbage in", or censored data in, then we cannot really have that debate or understand what truth is, if certain truths are deemed not allowed to exist in this world.

KENNY: Okay, so let's unpack the politics piece just a little bit. One of the valid criticisms on social media is that your feed is an algorithm that only makes you and your views more and more extreme, because you just create this self-referencing issue. What you're proposing would do the exact same thing, right? I only want to have an AI model running over conservative news sources or liberal news sources, and then you get responses, and then it feels right, and it feeds on itself as well.

KATE: We're focused on hard science. Of course, people are already training models on specific politics. Chat GPT definitely has specific politics it delivers. Our original focus is a correct-by-construction, production-level, ready out-of-the-box AI coding assistant. So, that is a little different focus.



And then, we are getting into different things like fluid dynamics, and then getting different types of experts in different types of fields. Creating these different agents, and then allowing people to bring in which white papers they have. And there will be buttons to push back against your ideas, what stuff you had not thought of, and things you disagree with. If you want a little pushback from different theories, you can get that.

The idea is, we need to be able to do R&D and innovate privately and in the ways that we see fit. There are certain types of science that I think are awesome, but are certainly very problematic. For example, Alzheimer's. Billions of dollars were spent on a specific piece of research that everyone thought was true. And now, it's recently been debunked.

But billions were spent. I mean, science is a self-funded study; it's not verified. We're looking to start solving pieces of that so we can have true innovation. And so we can enable the inventors, the innovators to have the tools that they need to do the work that they want to do without us telling them, "No, that science is not true." The scientists, they have to be able to have that control. I don't want to censor.

KENNY: That's fascinating. And I guess the underlying premise, which I didn't really realize before this conversation, is that especially at the cutting edge, science isn't true or false, right? They are still opinions until things are actually proven out through scientific methods. That's interesting.

KATE: But who is proving it out, even? And does the person proving have an agenda? Truth is such an elusive thing. I don't claim to have all the truth. And that's part of the thing I love about my co-founders. I might have one view of the world, and then they add information. I'm like, "Oh, great. I think I'm good to add that into my view of the world."

This is very essential to anything you're doing. And also, I'm talking to a lot of people in major R&D organizations, and they want to have these tools, but they are deeply concerned about handing this over to Microsoft or to Google. This is why I think it's important.

Even for my own space and company, there are all these things that I want to build. We have our initial entries to market. But to rapid cycle the innovation, I want to make sure that I'm building a digital innovation twin. And nobody else has access to that sacred information. I can keep it in-house for my company.

Just like if somebody does not want to use Chat GPT, because it's not transparent and it's incorrect, to create a quant trading bot. But you might like the tools that we have if you know it's not going anywhere, and it's correct by construction.



KENNY: Jeff, you want to add anything to that?

JEFF: Yeah, the only thing to add I think is that science in general does not have consensus. There were, I think, 50 or 80 scientists that did not believe in general relativity when Einstein first published it. And all these businesses were against it.

I think what we need to do is to figure out how to create methods or approaches around using the AI. That's because the AI can also easily lead you astray, unless you have the right guardrails in place to make sure you're narrowing down on the path to solving a particular problem, especially in something like engineering.

And then, just to go back to your question and so the audience is aware, there are uncensored APIs out there. For example, [Dennis.ai](#), which was started by Eric Worre, who is a big guy in the blockchain, crypto space. It's completely uncensored, and it's completely decentralized, too. Things for consumer-grade information are available to us today.

KENNY: Okay, that makes sense. I can't really find a good way to segue, so I'm just gonna do it. Kate, AI has a lot of excitement. Particularly, around replacing software development, which you talked about a little bit here. Is that going to happen? Should we have our kids going to school to get computer science degrees and become programmers?

KATE: Absolutely. Does anyone remember that movie made by the guys who did South Park where everyone didn't know how to make anything, so the whole humanity became really stupid? You still need humans in the loop. You are going to need to look under the curtain.

When you think of [Nick Bostrom](#) and people like the author of [Life 3.0](#), they were all very excited about AI. But they said, "as long as you do not attach it to the internet". We already let that genie out of the bottle. There are a lot of problems with AI.

And I think we will definitely need people who know code to look under the hood, and try to understand. Jeff also has a very specific answer, as a teacher who teaches code.

JEFF: Yeah, sure. I tell my students that you need to approach computer science in a new way, so that you have a very good abstract understanding of it. And the people that are going to get your job are the ones who know how to use the AI to write code, not the ones that have been writing code in traditional ways.

I think there is a bigger opportunity now for software engineers than there was in the past. AI is just accelerating the movement toward writing more code, more productively. I can give some anecdotal examples, like when I use my Pavilion shopping app here in Newport Beach. The thing just doesn't work in a lot of cases there.



These are big corporations that are putting out a lot of these apps and software. It's the same thing I noticed with my Starbucks app, and for that matter, my Apple iPhone software. There is a lot of work that still needs to be done to improve the quality of the code that is actually given to us as consumers.

KENNY: Okay, well, let me play devil's advocate to that point. In this scenario you are describing, where you have to use AI tools to write the code and then test it, does that not still create a future where there are a lot fewer software developers, but they have to have very specialized skills?

JEFF: Well, there is a pretty well known VC in this space, [Marc Andreessen](#). I heard this from him months ago. He said, there is so much code that needs to be written that it overwhelms the opportunity. And I mean, just taking those simple examples with big companies like Starbucks or Pavilions, or for that matter, Tesla, which I just turned on full self-driving last night. These things still need a lot of work.

Software is like a garden, you need to keep weeding and watering it, and making sure the pests stay out of it. And that means that there is a perpetual opportunity for the software engineers to work on it. Software just doesn't come out as a static 1.0 release. It is a continuous process.

I'm hoping that what we are going to find is ways to use these formal methods, which have been around for 30 to 40 years, but are not economical to use in many cases. Because when you get out of school, you just don't use them in the industry. But I think we're going to start applying some of these old techniques with a lot of the deepmap to improve quality and productivity.



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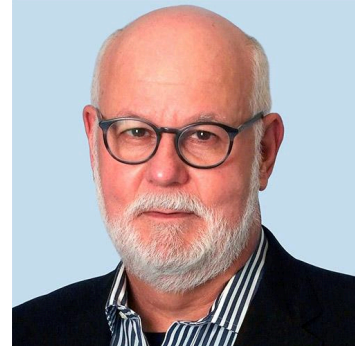


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