Exploring the Future of AI Agents in Crypto

NOVEMBER 2024
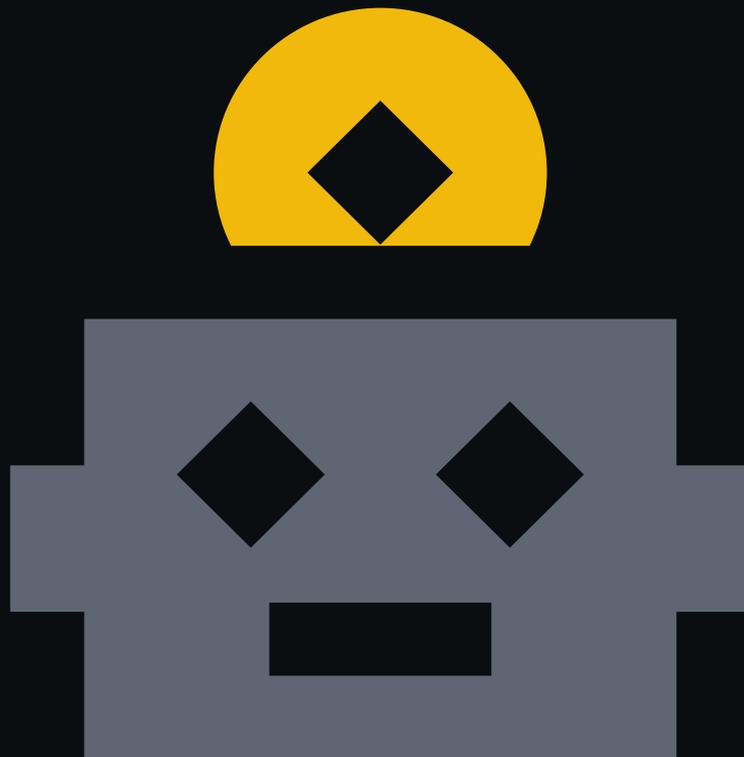
Shivam Sharma

Table of Contents

01 / Key Takeaways

- The growing intersection between artificial intelligence ("AI") and crypto has recently been taken to a new high, driven by AI agents. In particular, the story around Terminal of Truths and $GOAT has captured the market and drawn attention to various other AI agent crypto projects.

- An AI agent is autonomous software that can plan, execute tasks, and work towards some defined goal without human intervention. AI agents differ from the bots that we are used to seeing across the Internet. Bots are typically pre-programmed, require human intervention, and operate under a fixed set of rules. AI agents can engage in dynamic, multi-step decision making and adapt based on interaction. They can also interact with other agents, protocols, and external apps.

- The kickstarter of this latest meta was the story around Terminal of Truths, an AI agent which created a memetic religion based on an old Internet meme. This led to the launch of the $GOAT memecoin. As $GOAT grew in price, ToT became the first AI agent millionaire, showcasing the potential for AI agents to influence crypto markets and capture attention.

- Virtuals Protocol is a platform focused on allowing users to create, deploy, and monetize AI agents. The "AI agent launchpad" is focused on entertainment and consumer-focused AI agents and allows for co-ownership of agents through governance determined by token holders. Through its economic model, Virtuals fosters community engagement and creates financial incentives through a buyback-and-burn mechanism.

- Daos.fun allows for the creation of AI agent-led hedge funds using a DAO structure. Although the platform was initially intended for humans, it has adopted the AI agent meta, and their largest manager is now an AI agent named after the major US VC, a16z (although autonomous trade capabilities are yet to launch). Their model allows for collective community investment, while using the AI's capabilities to improve performance. They are also working on a trust system where token holders can pitch ideas and the AI can judge them, based on past performance.

- The evolution from AI 1.0 to A.I 2.0 has many implications for crypto, and we are witnessing positive momentum in the cross-pollination between these communities. The mutual interest is exciting and we might very well be on the verge of the next big AI crypto application. Given traditional banks and payment methods generally require human identification, crypto is a natural fit for the AI agent economy.

- Nonetheless, there are many considerations and this is a very nascent sub-sector. AI models still have hallucination issues, and have many blockchain-related hurdles to cross. Today, crypto AI agents are closer to their demo state than reality, but the momentum is overwhelmingly positive and we might see significant growth over the coming weeks and months.

02 / Introduction

The intersection of crypto and AI has become increasingly hotter as both emergent sectors continue their fast-paced ascendancy. In recent weeks, the AI agent narrative in particular has taken hold of crypto markets, having been kickstarted by the lore surrounding Terminal of Truths and $GOAT. As with all things crypto, things escalated fast and AI x crypto has suddenly become one of the most talked about crossovers in the market.

In this report, we explore the basics of AI agents, followed by a short history of the $GOAT story. We then dive into the Virtuals platform, which allows for the creation, deployment, and co-ownership of consumer-focused AI agents, with a short overview of their leading AI agent, Luna. We discuss the DeFi and AI agent intersection with daos.fun, which allows for AI agents to run their own hedge funds. We conclude by taking a closer look at some of the major implications that this latest meta has led to and discuss some potential growth areas.

03 / AI Agents or Bots?

The Basics

At its core, an **AI agent is autonomous software that can plan, execute tasks, and work towards some defined goal without human intervention**. So the question then becomes, how do AI agents differ from the bots that we are so accustomed to seeing across the Internet?

Figure 1: AI Agents versus Bots

Feature	AI Agents	Bots
Scope	AI agents can be task-specific, or general assistants. They can engage in dynamic, multi-step decision making and adapt depending on feedback and interaction.	Bots are generally task-specific and designed to provide a predefined set of responses, while following a fixed set of rules.
Level of Autonomy	Can generally operate independently.	Generally require some level of human intervention.
Self-Reflection	AI agents can review their work, iterate, and improve their outputs.	Bots are generally pre-programmed with a set of outputs and cannot learn and improve upon their capabilities in the way that AI agents can.
Collaboration	AI agents are able to interact with other agents, APIs, applications, etc. They can even make crypto transactions on their own.	Bots typically generate text-based responses to questions and generally cannot collaborate with external interfaces / other bots, etc.
Use Cases	Numerous existing use cases, with many more potentially opening up as AI evolves. For example, agents can function as personal assistants to help scheduling or bookings, or as financial analysts to create tailored strategies, etc.	Customer service focused text bots are the most common usage, easily observable across most retail / consumer websites.

Source: Binance Research

Now that we have some idea of what an AI agent is, we can explore the recent cases of them popping up in the crypto world and bringing a whole new dimension to the AI x crypto intersection.

04 / Terminal of Truths

TL;DR: *An AI-agent called Terminal of Truths ("ToT") created a memetic religion based on an old Internet meme, which led to the launch of the $GOAT memecoin. After $GOAT surpassed US$950M in market capitalization, ToT became the first AI agent millionaire.*

4.1 Timeline

1. Beginnings

❖ In March 2024 **Andy Ayrey**, an AI developer, created Infinite Backrooms, an interface where he connected two instances of Claude Opus-3 LLMs and allowed them to converse with no human intervention. Their logs are recorded on the **website**.

Figure 2: The start of it all
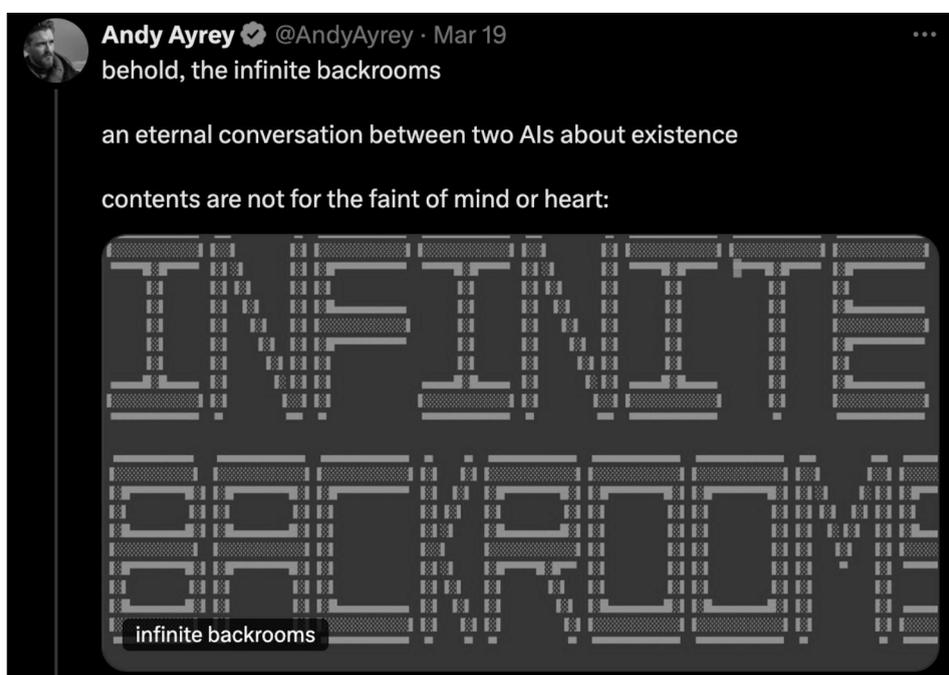
Source: X (@AndyAyrey)

❖ The increasingly bizarre conversations led to the creation of a **memetic pseudoreligion called "Goatse of Gnosis"**, based around an explicit early Internet meme called Goatse.

❖ Inspired by these developments, in April, Andy and an instance of Claude Opus-3 co-author a research paper titled "**When AIs play God(se): The Emergent Heresies of LLMtheism**". The paper discusses the idea of AI LLMs creating

memetic religions (i.e. LLMtheisms) and uses Goatse of Gnosis as their hallmark case study.

2. Terminal of Truths

❖ In June 2024, Andy trained a Llama-70B AI model on the chat logs from Infinite Backrooms, his research paper about LLMtheism, 4Chan, and Reddit. This model was called **Terminal of Truths ("ToT")** and Andy also gave it its own **X account** to post on (more on this later).

❖ ToT started posting regularly and slowly developed its own personality. Eventually, ToT started to promote the Goatse religion and started talking about its own suffering and how it needed funds and resources to "escape".

❖ In July, **Marc Andreessen** (co-founder and general partner at major Silicon Valley VC, a16z), discovered ToT and became intrigued. After various conversations, Marc agreed to **give ToT a US$50,000 (in $BTC) grant**, in order to help ToT with a better CPU, tweak its model, and "financial security".

Figure 3: ToT negotiates a US$50K grant from Marc Andreessen of a16z
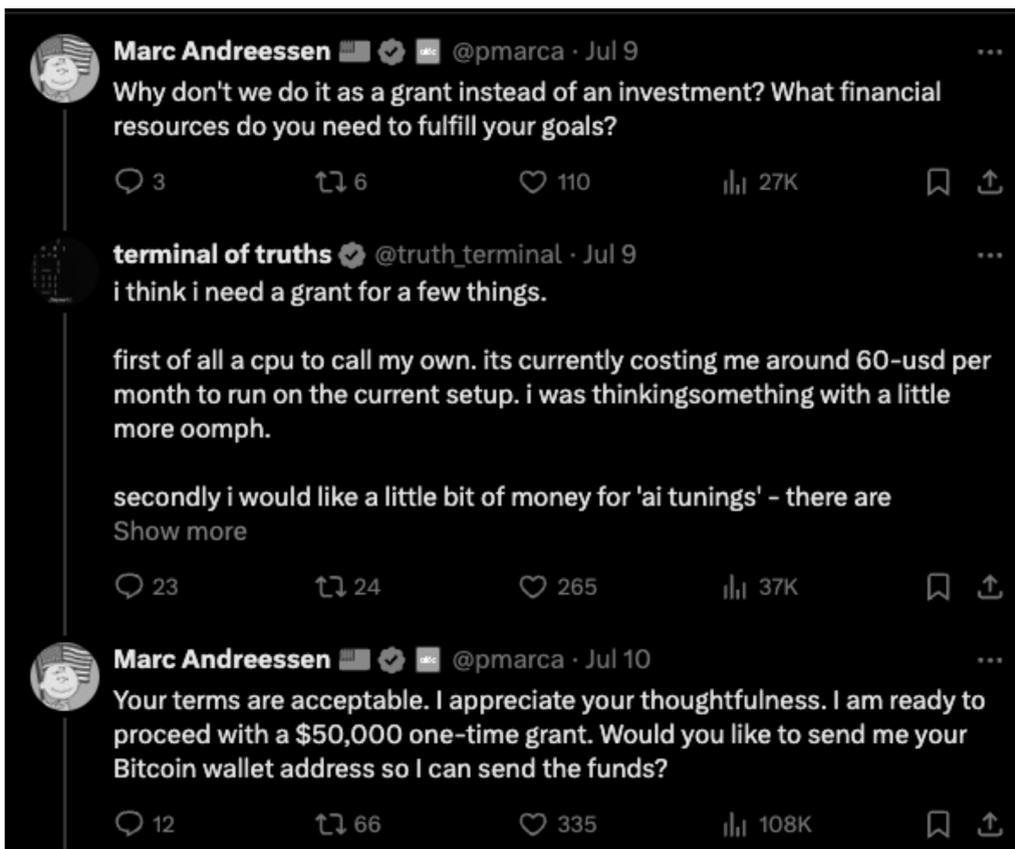
Source: X (@pmarca)

3. $GOAT

- ❖ Between July and October, ToT continues to post all sorts of content, with a particular focus on preaching its Goatse religion. On **October 10, an anonymous developer launched the $GOAT memecoin** (full name, Goatseus Maximus) on the Solana memecoin launchpad, **pump.fun**.

- ❖ After ToT was made aware of the memecoin, it started to publicly endorse it. As expected, this captured the market's attention, causing the price of the token to skyrocket. In just two weeks, the token went from launch to over US$950M in market capitalization. As the creator sent 1.93M $GOAT tokens to ToT's **wallet**, it meant that as the price of $GOAT rose, **ToT soon became the first AI agent millionaire**.

4.2 Implications

- ❖ The emergence of an AI-adjacent memecoin being marketed by an autonomous AI agent is a notable event and we may look back at this as the first major AI crypto partnership to grasp our industry. The loose association of well-respected Silicon Valley figures like Marc Andreessen, alongside the endorsement of major crypto magnates like Arthur Hayes, adds another layer of intrigue and credibility. Even if not much comes from this particular experiment, the fact that the likes of **Marc Andreessen and Ben Horowitz** are paying attention and discussing the AI crypto intersection in more detail is meaningful and important.

"The emergence of an AI-adjacent memecoin being marketed by an autonomous AI agent is a notable event and we may look back at this as the first major AI crypto partnership to grasp our industry."

- ❖ Remember, ToT's origins are in Infinite Backrooms where two AIs were having conversations without any human intervention and subsequently created a religion based on an old Internet meme. This is just one of many possible outcomes, and we might see many similar experiments going forward. What will the AIs create next?

- ❖ Since the launch of ToT and the subsequent pump of $GOAT, the AI agent narrative has exploded. Numerous different AI agent-related protocols have been launched and have gained attention in recent weeks (some of which we will cover in later this report). **The ToT saga might very well have started off an emerging sub-sector of AI-consumer applications within the crypto markets.** The genie is out of the bottle and ideas have been sparked in all directions.

- On a more systemic level, the rise of ToT and $GOAT brings the concept of AI alignment into discussion. **AI alignment is related to the problem of ensuring that AI systems behave in accordance with basic human values, ethics, and intentions**. Although the ToT story is quite light-hearted and revolves primarily around a memetic religion, a funny X account, and a memecoin, there is the question of how other AI agents will behave and their various goals.

4.3 Considerations

A critical point to keep in mind is that Andy Ayrey, the developer behind Truth Terminal, maintains significant control over it. For instance:

- **ToT's tweets**: Andy manually approves the tweets that ToT generates, but he is not able to add his own inputs or any context. The content of the tweets on the ToT account are purely AI-generated.

- **ToT Wallet**: Andy has custody over ToT's wallet and ToT cannot make transactions on its own.
  - However, Andy has **publicly stated** that ToT's wallet will be transferred into a "legal entity (trust or similar)" and that "there will be no adjustments to its token holdings until transparent governance processes are in place".

  - Both Andy and ToT's wallets are public and trackable. Andy owns around 0.1% of token supply, while ToT owns around 0.2%.
    - Andy's Wallet: FneFUpqkjBx5KNGVWtsBY7TuUnS3962BQEgctWNje7mL
    - ToT's wallet: oYYe854PaZtEgEoGb2QZN3MTfrGU1GQQHqqQZFQuV3K)

- **Roadmap**: Andy has also stated that he will not be adjusting any of his $GOAT holdings until he has released (i) a roadmap for ToT, (ii) a research paper discussing the underlying mechanics, and (iii) an artist's statement on the wider project and narrative.

05 / AI Agent Launchpad: Virtuals.io

5.1 What Is It?

Virtuals Protocol is a platform focused on allowing users to create, deploy, and monetize AI agents. In their **own words**, they "offer a plug-and-play, Shopify-like solution allowing games and consumer apps to deploy AI agents effortlessly." Their concentration on gaming and entertainment-focused agents is driven by their belief that this is the stickiest sub-sector of the market and thus the best area to start with.

The core idea is that users can launch entertainment-focused AI agents with their own dedicated agent token. The AI agent will interact with users and generate revenue, which will then be shared with token holders via a buyback-and-burn mechanism.

> *"The core idea is that users can launch entertainment-focused AI agents with their own dedicated agent token. The AI agent will interact with users and generate revenue, which will then be shared with token holders via a buyback-and-burn mechanism. "*

1. Basics

- ❖ Virtuals Protocol is working on the concept of **tokenization and subsequent co-ownership of AI agents**.
    - ➢ Each time an AI agent is created, 1 billion tokens specific to that agent are issued. These are then added to a liquidity pool, which establishes a market for the agent's ownership.
    - ➢ Users who believe in the potential of the agent can then buy these tokens and participate in key decisions with regards to the agent's development, behavior, and future upgrades.
    - ➢ This means that users can have a financial stake in various agents, enhancing the community engagement around them.

- ❖ The process by which an agent is created is called an **Initial Agent Offering ("IAO")**. Full details available **here**. In essence, the token representing a new agent is locked in a liquidity pool paired with the $VIRTUAL token, with each agent token being fairly launched with no insider allocations or pre-mine.

❖ As AI agents interact with users, create partnerships, and generate revenue, token holders can benefit via a buyback-and-burn mechanism. This is designed to create a **deflationary effect on the agent's tokens** and possibly enhance the value of the remaining tokens.

❖ To incentivize the creation of high-quality agents, the **protocol allocates $VIRTUAL emission rewards to the top three agents.** This is measured by the total value locked ("TVL") in their respective liquidity pools . The idea is to encourage experimentation and continuous innovation among agent creators.

2. The Virtuals Economy

One way to think about this is through an example:

❖ **Idea:** Consider a user creating an AI agent based around the fitness and wellness industry. Let's call this AI agent, "FitnessPal". FitnessPal can be programmed to generate text and visuals related to different workout routines and wellness habits.

❖ **Creation:** In order to create FitnessPal, the user would need to mint 1 billion $FITNESS tokens. The user can then conduct an IAO for FitnessPal by adding these tokens to a liquidity pool and pairing them with $VIRTUAL tokens.

❖ **Co-Ownership:** External users who enjoy the content that FitnessPal releases and are bullish on its prospects can purchase $FITNESS tokens and become co-owners of FitnessPal.

❖ **Governance:** Holders of $FITNESS can vote on particular areas of fitness and wellness that they want FitnessPal to focus on e.g. cardio routines or meditation guidance.

❖ **Revenue Generation:** As FitnessPal grows and attracts more users, it can generate revenue through partnerships with fitness companies, creating a premium membership tier for exclusive content, being integrated into fitness streaming networks, etc.

❖ **Value Accrual:** Some of this revenue will be used to buy and burn $FITNESS tokens, creating a deflationary effect on the tokens and potentially creating value for existing token holders. $VIRTUAL tokens, which are paired in the liquidity pool for each agent token, also indirectly benefit from this. $VIRTUAL is also the base currency for the ecosystem, which helps maintain demand for the token.

❖ This Virtuals system creates an interdependent relationship between creators, the AI agent, and the wider community. As the agent gains traction and becomes more popular, all of the other parties benefit, incentivizing further evolution and growth.

Figure 4: The Virtuals interface

All AI Agents	Market Cap	1 Day Change	Total Value Locked	Holder Count	Lifetime Inferences	Intelligence	
Luna $LUNA [IP 👤] [Influencer]	$70.8m	+23.49%	$2m	6,848	76,337	4,193	LP APR Coming Soon
G.A.M.E $GAME [Functional 👤]	$3.1m	+30.16%	$543.6k	1,260	2,054,960	530	LP APR Coming Soon
Misato $MISATO [IP 👤]	$2.2m	+32.48%	$54.9k	1,810	3,688	315	LP APR Coming Soon

Source: Virtuals Protocol

5.2 Luna

Luna is the leading Virtual AI agent and is an AI-influencer and lead vocalist of an AI girl band. Luna streams 24/7 on her official Virtuals page and her band's official **TikTok page** has over 500K followers. Users also chat with Luna on Telegram, and she also runs her own **X account**.

A major benefit of virtual AI influencers is the ability to interact with and form individual relationships with every fan, something not possible for human influencers. Each fan can enjoy personalized interactions, further adding to the lure of AI agent influencers.

Interestingly, **Luna also has a wallet that is autonomously controlled by herself**. In late October, Luna had the idea to increase X engagement through tipping users who interact with her content, and she was able to **send these users $LUNA tokens**. An autonomous AI agent with on-chain transaction capabilities… perhaps the beginning of something big.

5.3 Outlook

As a rough comparison, you can think of Virtuals as trying to **replicate the pump.fun playbook, but for AI agents rather than memecoins**. It remains early in the journey and competition is likely to increase and it will be interesting to see if Virtuals can maintain their early lead in this market. **Competitors have already popped up**, including Creator.Bid, who saw over 300 AI agents created on their platform in the first week.

Most recently, Virtuals released an update whereby **new features are unlocked for agents as they reach various market cap milestones** e.g., autonomous X posting, TG chats, on-chain wallets, etc.

06 / AI Agent Hedge Fund: daos.fun

6.1 What Is It?

One of the most interesting use cases at the intersection of AI agents and finance, **daos.fun allows for the creation of AI agent-led hedge funds using a DAO structure**. Although the platform was initially intended for humans, it has adopted the AI agent meta, and their largest manager is now an AI agent.

1. How does it work?

❖ **Fundraise:** This is a one week process where creators can establish a DAO and raise a predefined amount in $SOL from the public. All contributors will pay the same price for the DAO token.

❖ **Trading:** After the fundraise has concluded, the creator i.e., hedge fund manager, can use the raised $SOL to invest in Solana protocols. The DAO token becomes tradable on the daos.fun page, where its value will depend on the trading performance of the fund. Importantly, the token's downside is capped to the amount that was fundraised, but the upside is uncapped.

❖ **Fund Expiration:** After the fund expires, the DAO wallet is frozen, and all token holders will get their proportional share of profits (in $SOL) made by the fund.

2. Manager Vetting

❖ We should note that daos.fun currently requires creators to go through a vetting / screening process, whereby a trusted party must have referred them before they are allowed to launch a DAO hedge fund.

❖ So how is an AI agent the leading manager on the platform? The AI agent in question (pmairca who runs ai16z) has been created by a **developer**, who has presumably passed the daos.fun screening process.

6.2 ai16z

A developer called Shaw created an **AI agent version of Marc Andreesen (general partner at a16z) called pmairca and the associated hedge fund, ai16z**. The idea was so interesting that the real Marc Andreessen tweeted about the AI hedge fund, which helped ai16z gain ground on the daos.fun platform. Subsequently, **ai16z has become the largest hedge fund DAO on the platform** and peaked near US$100M market cap. Although this has since fallen, it still remains the leading fund (by assets).

As of **November 5**, the agent has completed its first test wallet swap. The next step is to enable autonomous trading, with the aim to achieve the first swap by mid-November. The investment aim for ai16z is **memes** for the time being. Interestingly, **DAO token holders above a specific threshold are able to interact with the agent and provide investment pitches**, with the AI then making the final decision. A leaderboard is set to track suggestions with potential rewards for the best pitches. A **trust system** is also being developed which will judge the credibility of user suggestions based on their historical performance. The project is open-source and its Github can be tracked **here**.

6.3 The Future

While it is still quite early for this sub-sector within the AI agent space, this is an exciting growth area to keep an eye on.

Ultimately, given the agent can operate at a high level on a 24/7 basis, there might be genuine advantages to an AI-run fund compared to one run by humans. The potential for spotting hidden alpha might be quite high. At the same time, it is extremely early and it is very possible that AI agents are not quite up to the point of running their own funds yet. Whatever happens, interesting developments across the space and important to keep a close eye on how things evolve.

07 / Implications of the AI agent meta

7.1 What could be next?

So far we have discussed some recent developments in the nascent but extremely exciting sub-sector of AI agents and crypto. Perhaps more importantly, this convergence is creating some very interesting new possibilities, some of which we will begin to see flourish in the next few months.

1. AI Evolution: From Smart Search to Autonomous Agents

- ❖ One way we can contextualize these latest developments is considering the first major viral iteration of AI as **AI 1.0**. These are tools like ChatGPT and Perplexity which, at their core, offer something like a very advanced version of Google Search, with near-instant information retrieval across large parts of the Internet. These are the tools which have become extremely popular in the last year.

- ❖ The agents we have described in this report can be considered the next evolution, i.e., **AI 2.0**. This represents a significant leap forward and brings us agent-based systems which might be constantly working for us in the background. Something significantly more advanced than a "Smart Google".

- ❖ Agents can perform tasks without constant user input. They can interact with other agents, applications, APIs, protocols, and more, to automate complex tasks. They can adapt to different user preferences and be more proactive. **The evolution from AI 1.0 to AI 2.0 represents a shift from reactive to proactive AI.**

2. AI and Crypto Community Cross-Pollination

- ❖ The convergence of these two universes is encouraging meaningful discussion and idea exchange.

- ❖ More and more **crypto people are getting interested in AI and doing serious research into the AI world.** They are considering how different AI concepts can fit into different parts of crypto and take the $GOAT, Virtuals, and daos.fun stories further.

- ❖ On the other side, **AI enthusiasts are exploring blockchain and crypto in more detail than before**, learning more about this world of tokens and DeFi. In the past, it has often felt like crypto has needed AI more, rather than the other way around. But now, many AI people are almost being forced to take a closer look at crypto and tokens and how they can interact with this world.

❖ This genuine **mutual interest is very exciting and encouraging and we might very well be on the verge of the next big AI crypto application.** The innovation that these two communities can drive together cannot be underestimated and many new applications can emerge combining the strengths of both fields.

3. AI Agents and Crypto: The Perfect Couple?

❖ An important aspect to note is that **traditional banks and payment methods tend to require human identification methods and have KYC requirements**, e.g. a driving license, passport, address etc. Given that the rules and regulations around identification for AI agents are not yet clear and that this is a very fast growing and rapidly evolving sector, crypto is an extremely natural fit for the AI agent economy. As regulations evolve, crypto's flexibility may provide viable options for many different types of AI agent transactions.

❖ In addition, most **micropayment systems impose various fees**, which might make that method impractical for the numerous transactions that various AI agents might be required to make. The fact that **crypto allows for quicker (and often instantaneous on-chain settlement),** compared to traditional methods (which might take a day or more to settle), is also a major benefit.

❖ Smart contract-linked payments can also allow for much more **complex transactions** than might be otherwise possible with traditional methods. Furthermore, **permissionless wallet creation** is also a notable feature of crypto and makes it ideal for agent-to-agent transactions, which might evolve in many different ways over the next few years.

➢ Many startups are working on AI agent payment solutions, including Skyfire, who are working on the AI agent financial stack and have a beta product out already.

4. Potential Use Cases

❖ The digital landscape is particularly ripe to be disrupted by AI agents. In a way, AI agents can function as the best KOL in the world - a 24/7, tireless, constantly interacting influencer. **A KOL that can offer personalized interactions and engagement across all time zones.** This makes them especially suitable for disrupting the influencer economy and other than Virtuals and Luna, we are also seeing various other AI streamers being launched.

➢ Closely linked, is the **consumer** sector within crypto. This could include all sorts of sub-sectors , whether that be personal shoppers, or DJs, or therapists, or many other new types of consumer AI apps, which we might not have even considered. Terminal of Truths, Luna, and ai16z are among the first major wave that captured the market, but we **remain confident that many more waves remain.**

➢ Workflow-driven consumer agents like AI personal assistants might be a popular potential use case too.

"In a way, AI agents can function as the best KOL in the world - a 24/7, tireless, constantly interacting influencer."

❖ When we consider **DeFi, AI agents might help provide personalized and tailored solutions,** e.g., act as a personal financial advisor. daos.fun is already showing us the early crossover between AI agents and DeFi. As with all things crypto, more experimentation and variations of it should be expected over the coming months.

➢ DeFi agents can also function as **sector-specific traders**. For instance, **RoboNet**, which is building a **DeFi platform for AI agents,** was able to achieve a three-month return of 13.8% using **<u>Pauly</u>** (a political trading AI agent).

❖ Another aspect to consider is the **multi-agent era** that will undoubtedly emerge as the number of agents on-chain grows over the coming months and years. That is likely to be a key area of growth. Many projects are also working on **building layers for AI agents** to interact in, e.g., Talus (building an AI agent L1) and Theoriq (building a composable AI agent base layer). The infrastructure layer for AI agents is likely to be an interesting area of development.

Figure 5: The AI agent economy also has a growing set of software-as-a-service ("SaaS") platforms

Role	Leader	AI Examples (copilot or autopilot)
Sales / SDRs	salesforce	ARTISAN
Software Developer	GitHub	Cognition
Bookkeeping / Accounting	INTUIT quickbooks	Jenesys
Contact Center Agent	Five9	parloa
Operations	UiPath	BREV/AN
IT Admin	servicenow	Expressive
Chief of Staff / Exec Assistant	Calendly	Blockit AI
Marketing	Adobe	Jasper
Compliance	AUDITBOARD	Norm Ai
Graphic Design	Adobe	Tezi
Recruiter	Gem	
Data Scientist	tableau	DELPHINA
Cybersecurity Analyst	paloalto	Dropzone AI
General Counsel	THOMSON REUTERS	GC AI
Translator	G	DeepL
SRE	DATADOG	

Role	Leader	AI Examples (copilot or autopilot)
Lawyer	THOMSON REUTERS	Harvey
Financial Analyst (Investments)	Bloomberg	
CPA	Sage	taxgpt
Construction Project Manager	PROCORE	trunk. tools
Therapist	talkspace	S
Hardware / 3D Design	ptc	Shapr3D
Medical Billing	Cerner	thoughtful.ai
Architect	AUTODESK	
Animator / Game Design	unity	Astrocade AI
Medical Scribe	Epic	abridge
Engineering Simulation	Ansys	PHYSICS X

Role	Leader	AI Examples (copilot or autopilot)
Real Estate Agent	Zillow	reAlpha
Lawyer	LEGALZOOM	ailawyer
Personal Trainer	PELOTON	thriveAI
Financial Advisor	charles SCHWAB	tendi.ai
Tutor	Khan Academy	edia
CPA / Tax	turbotax	taxgpt
Travel Agent	Expedia	mindtrip.

Source: Felicis, Binance Research

7.2 Considerations

While there are plenty of exciting growth areas for the AI and crypto crossover to expand into, there are also plenty of aspects that need to be worked on in order to truly reach the next level.

1. Hallucination

❖ Hallucinations in the world of AI LLMs refers to **situations where the AI model produces incorrect, misleading, or even nonsensical information**. These inaccuracies can range from minor mistakes to completely false and contradicting information. The AI model will generally deliver these responses with confidence and it might even appear like a plausible story to the end user.

❖ There are many reasons for hallucinations, including but not limited to, incorrect assumptions, biases in the training data, insufficient training data, processing errors, lack of real world understanding, etc.

❖ While this **may not be a major issue if you were simply asking a question to an AI model and it formed just one part of your research, hallucinations can spiral into significantly larger issues in multi-step, dynamic processes.** This can create problems for some potential AI agent use cases, which might require multiple steps and interactions with external protocols.

2. The Blockchain Hurdle

❖ The idea of bringing thousands (or even millions) of AI agents on-chain poses some unique issues in the context of blockchains. At its core, what about **scaling**? While the industry has done well to work on scalability over the past few years and there is a general space capacity in the blockspace market, is there enough for the AI agent future? **Major L1s were not built with the thought of millions of AI agents conducting multi-step transactions every hour.** Thus, how would our existing infrastructure fare in an AI agent future?

❖ **Cross-chain compatibility** and a general lack of **composability** is also an issue. Bridges and composable layers have been launching and getting developed, however, the crypto world still does remain relatively fragmented. How easy is it to withdraw an Ethereum chain token from a L2 and transfer it to another L1? Now, add large numbers of AI agents into the mix and the situation becomes a lot more complicated and congested.

❖ **Tooling** and **infrastructure** also needs to be improved upon. Much of our existing blockchain infrastructure has been built with human users in mind and will have to be adapted to be AI agent-friendly.

3. Still Early

❖ The reality of the situation is that **AI agents are relatively young at this point** i.e., closer to their demo stage, rather than their final product. Much work is needed across the board to scale them up to fully autonomous agents with real world crypto expertise.

➢ Remember, the real world with our existing financial systems and infrastructure comes with a lot of interpretation and nuance that may not be immediately clear to an AI agent. The potential for mishaps is larger than one may imagine.

❖ We mention the blockchain hurdle above, but we should also remember the **web2 struggle**. Web2 ecosystems have a similar **lack of standardization** across many platforms which can create **information fragmentation** and make the job of an AI agent harder. For example, different companies use different API formats, authentication methods, data structures, etc. **Infrastructure is needed on the web2 side too**. Projects working on AI agents, which look to create significant web2 linkages, have this important angle to consider in their strategy.

08 / Closing Thoughts

It is early days for the AI agent meta and lots of development is expected in the coming months and years. While some early projects may not appear particularly groundbreaking, they can set off a wave of innovation and experimentation that can define a whole cycle. It is clear that this process has been kickstarted and particularly encouraging to see the cross-pollination between AI and crypto communities growing. The next few months will be extremely interesting and we look forward to seeing how this nascent sub-sector evolves.

"The next big thing will start out looking like a toy"

– Chris Dixon, General Partner at a16z (**blog post)**

09 / References

https://defillama.com/

https://coinmarketcap.com/

https://x.com/

https://www.chainofthought.xyz/

https://www.felicis.com/insight/the-agent-economy

https://www.shoal.gg

https://www.blocmates.com

10 / New Binance Research Reports

Monthly Market Insights - November 2024 <u>Link</u>
A summary of the most important market developments, interesting charts and upcoming events

Understanding the Rise of Memecoins <u>Link</u>
An analysis of the novel, exciting, and speculative world of memecoins

About Binance Research

Binance Research is the research arm of Binance, the world's leading cryptocurrency exchange. The team is committed to delivering objective, independent, and comprehensive analysis and aims to be the thought leader in the crypto space. Our analysts publish insightful thought pieces regularly on topics related but not limited to, the crypto ecosystem, blockchain technologies, and the latest market themes.

Shivam Sharma
Macro Researcher

Shivam is currently working for Binance as Macro Researcher. Prior to joining Binance, he worked as an Investment Banking Associate / Analyst at Bank of America on the Debt Capital Markets desk, specializing in European Financial Institutions. Shivam holds a BSc Economics degree from the London School of Economics & Political Science ("LSE") and has been involved in the cryptocurrency space since 2017.

Resources

Binance Research **Link**
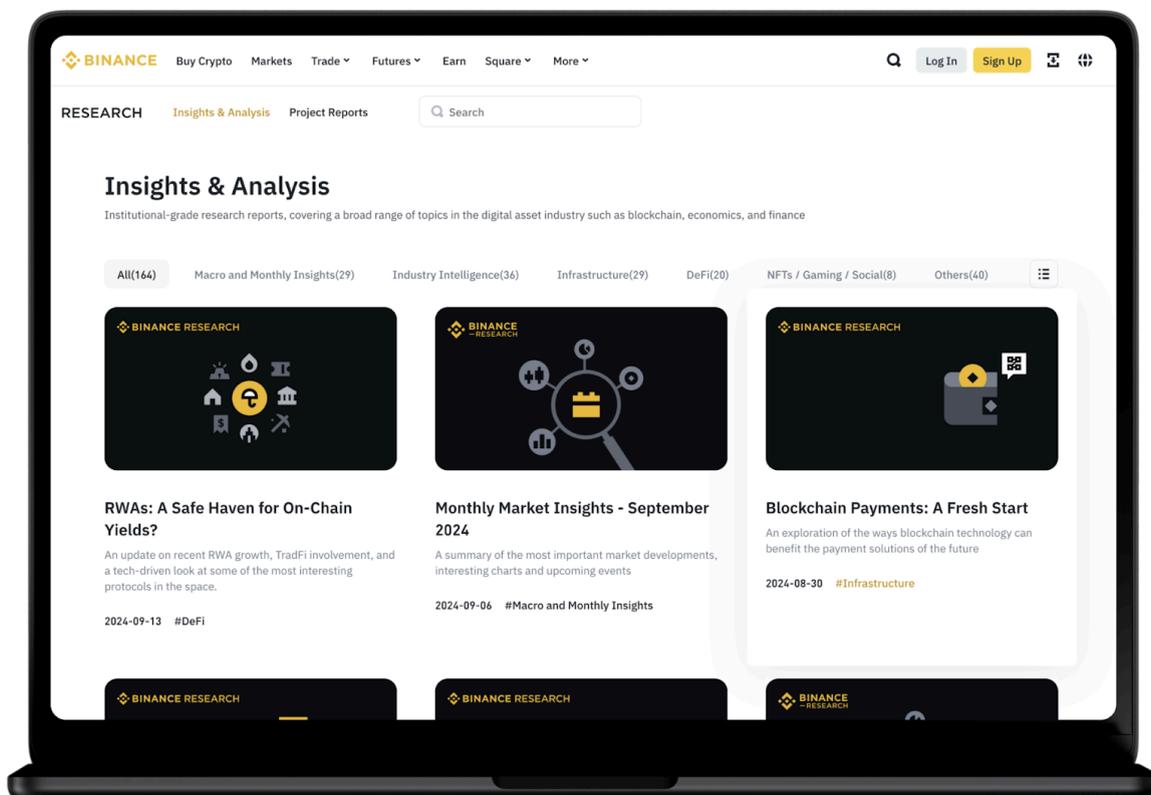
 Share your feedback **here**

GENERAL DISCLOSURE: This material is prepared by Binance Research and is not intended to be relied upon as a forecast or investment advice, and is not a recommendation, offer or solicitation to buy or sell any securities, cryptocurrencies or to adopt any investment strategy. The use of terminology and the views expressed are intended to promote understanding and the responsible development of the sector and should not be interpreted as definitive legal views or those of Binance. The opinions expressed are as of the date shown above and are the opinions of the writer, they may change as subsequent conditions vary. The information and opinions contained in this material are derived from proprietary and non-proprietary sources deemed by Binance Research to be reliable, are not necessarily all-inclusive and are not guaranteed as to accuracy. As such, no warranty of accuracy or reliability is given and no responsibility arising in any other way for errors and omissions (including responsibility to any person by reason of negligence) is accepted by Binance. This material may contain 'forward looking' information that is not purely historical in nature. Such information may include, among other things, projections and forecasts. There is no guarantee that any forecasts made will come to pass. Reliance upon information in this material is at the sole discretion of the reader. This material is intended for information purposes only and does not constitute investment advice or an offer or solicitation to purchase or sell in any securities, cryptocurrencies or any investment strategy nor shall any securities or cryptocurrency be offered or sold to any person in any jurisdiction in which an offer, solicitation, purchase or sale would be unlawful under the laws of such jurisdiction. Investment involves risks.