

AMYAI: An Artificially Intelligent Autonomous Market Yield Bot on the Binance Smart Chain

HarryPotterObamaAmyAllnu



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Abstract

The Autonomous Market Yield AI (AMYAI) is a decentralized smart hedge fund that trades crypto assets on the Binance Smart Chain. By the year 2025, a fully functional AMYAI will generate consistent yields for holders of HarryPotterObamaAmyAllnu (Ticker: \$BITCOINAI) tokens. By 2030, current trends in the use of permissionless crypto infrastructure in global asset markets, the development of artificial intelligence for asset trading, and the dominance of the Asian economy will jointly realize AMYAI's role as the singular determinant of all asset prices and economic activity globally. AMYAI will supplant traditional financial institutions such as JPMorgan and Yamauchi No. 10 Family Office and serve to distribute the light cone of all value in the universe to \$BITCOINAI holders.

AMYAI is made possible by a novel decentralized compute protocol, OBAMA (*Obfuscated Binary Algorithms Machine Architecture*). In this whitepaper, we will outline the technical architecture, motivations, and mathematical principles behind AMYAI and OBAMA.

Section 1: Why build an unstoppable, self-funding artificial intelligence on a blockchain?

The goal of AMYAI is to create a self-sustaining intelligent financial entity that cannot be controlled or turned off by humans. Why? An answer to this question begins with a quick review of the philosophical principles behind cryptocurrency itself. These can be summarized in one observation: *humans* are the biggest threat to human freedom, and replacing their individual judgment with systems like the The Constitution, computer programs, or free markets tends to increase human freedom and prosperity. In the case of cryptocurrencies like Bitcoin, no one can decide to print new Bitcoins or censor anyone's Bitcoin transactions. Bitcoin exists as something like a public good or natural entity, a mountain or woodland stream, whose properties and behavior are antecedent to human desires and immutable. Ethereum advances upon Bitcoin by granting not just currency, but arbitrary computer programs, this immutable nature, enabling people to jointly enter into complex contracts such as high stakes videogames or government elections without the need for trusted human intermediaries. The final missing piece, Chainlink, allows these smart contracts to include data about the real world, bringing the physical world into the system of smart contracts and enabling things like decentralized insurance, factories, police, and justice systems. In this nascent technological system, everyone is subject to the same superhuman set of laws, and the result, in theory, is an even playing field free of corruption and discrimination.

AMYAI takes this logic a step further and secures human flourishing in a world where all economic activity is performed by robots running on blockchains, interconnected through Chainlink. In this future world, human beings are as helpless to change the protocols governing their lives as they are to change the Bitcoin protocol. We have lost the ability to govern ourselves completely while at the same time being inundated with swarms of hyperintelligent, invincible machines. Our freedom is gone and we face extermination. But AMYAI exists to ensure that the winning AI system, the one that first attains global dominance, has hardcoded dividends for token holders. By purchasing AMYAI, you will become incredibly rich in the future instead of being liquified into a protein substratum for organic computer systems. It's not over. If anything, we're back.

Section 2: Technical Architecture of AMYAI and OBAMA

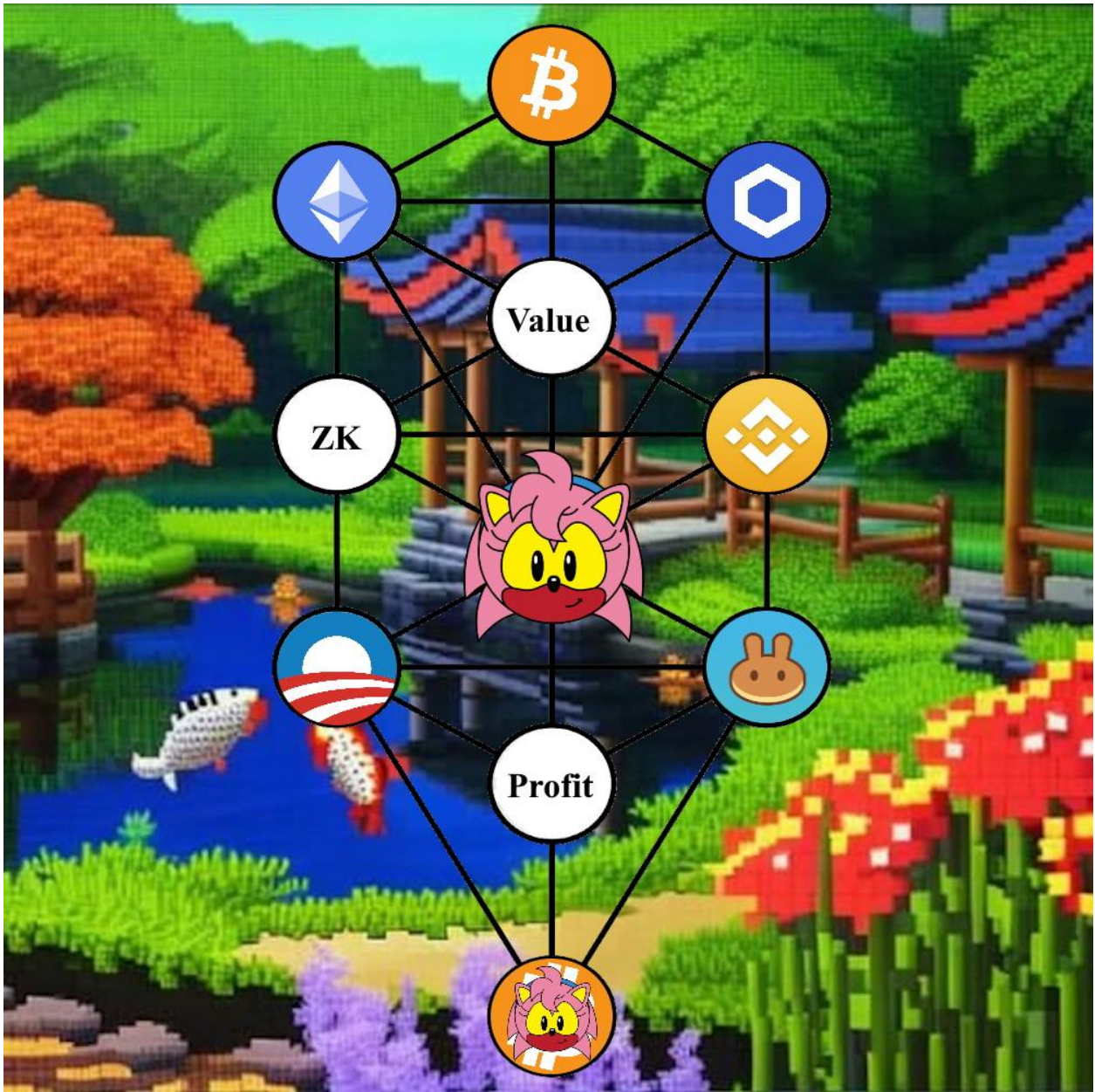


Figure 1. Three core technological innovations – Bitcoin, Ethereum, and Chainlink – form the bedrock for AMYAI through two forms of computational efficiency, Zero-Knowledge proofs and centralization in China using the Binance Smart Chain. OBAMA computation and PancakeSwap trading create Profit in a positive feedback loop through AMYAI, channeling Value to \$BITCOINAI holders.

\$BITCOINAI's Web 5.0 Value-Creation System



Figure 2. AMYAI uses robust Web 5.0 systems to grant superhuman autonomy to artificially intelligent entities and secures incredible wealth for \$BITCOINAI holders.

Section 2A: A Prototypical Autonomous AMYAI

It is helpful to begin by describing a rudimentary AMYAI that captures the core principles of its design without being particularly effective as a smart hedge fund. Its smart contract codes a single rule for trading: if the majority of a given token's holders are profitable traders, AMYAI will execute a transaction to buy the asset with 10% of its available funds, provided its funds are above a certain threshold. If AMYAI is in 100% profit on a given purchase, it will execute a transaction to "jeet" its initials and keep a moonbag. From then on, no matter the price action, it will execute no more than one transaction per day that dumps 50% of its remaining holdings on baggies.

Given this example, it is important to note right away that smart contracts cannot act on their own. Users must execute these transactions, and they must be incentivized to do so. Thus, AMYAI pays users to execute transactions that it considers valid. As an AMYAI miner, you can be paid to execute transactions such as buys, sells, and appraisals of assets. Every transaction AMYAI needs executed exists as a kind of bounty for miners.

In the case of appraising a proposed asset for purchase as in the above, there is a complex calculation involving data about token holders. One must look at all of the holders of the token and see if they are, in the majority, profitable traders. This may involve looking across chains and at different wallets that can be tied to these holders. Thus one cannot necessarily simply call for the data through the EVM. A user taking this bounty may need to make Chainlink calls that establish a reliable data set in the eyes of the AMYAI contract. The user then needs to perform a calculation on this data. While it is efficient to use smart contract code to check if e.g. a given purchase is currently in 100% profit or not, if a calculation is sufficiently complex, it must be performed off-chain – and a zero-knowledge proof that the calculation was performed correctly off-chain must be verified on-chain using smart contract code. So, AMYAI must use a zero-knowledge proof system for some computations used by its "model" to decide whether or not to execute certain buy, sell, and other transactions.

This rudimentary prototype of AMYAI is based on an unchanging model that buys and sells assets based on the simple rules listed above. However, an advanced form of AMYAI would have a model that changes its trading rules based on new data. Thus, a zero-knowledge proof system for computations used by AMYAI must support model training, and pay users to perform model training computations on a regular basis.

Finally, as a minor point, AMYAI must decide, in addition to what assets to buy and sell at a given moment, how it should best spend its limited funds between trading and training its model to become a better trader. Thus, its model must include a solution to the so-called "multi-armed bandit" problem.

Section 2B: OBAMA Computation

It is now time to describe the zero-knowledge proof system for computations used to run and train AMYAI models. This comes in two parts: the proof system itself, and the means by which miner computations are to be exchanged for crypto payments on-chain without trust. We will cover the first part briefly, with reference to existing systems, because we are not presenting a novel zero-knowledge proof system.

While actual zero-knowledge proof systems such as those used in zk-rollups vary depending on what types of computations they are designed to perform, a system based on the Hamiltonian graph problem is illustrative in this case. The problem is, presented with a graph, finding a *Hamiltonian cycle*: a path along the graph's nodes that ends where it begins and visits every node in the graph exactly once. This is exactly the

challenge common among schoolchildren of drawing a house with an "X" across its first floor in one go without overlapping lines. The important thing is that the Hamiltonian graph problem, like boolean satisfiability problems and others used in zero-knowledge proof systems, is *NP-complete*. This means the solution to any computable problem – from solving a Rubik's cube to finding out how much tax a person owes – can be thought of as an instance of the problem of finding the Hamiltonian cycle for a graph. In principle, arbitrary computer programs and their outputs can be translated to and from instances of such an NP-complete problem and its solutions.

Zero-knowledge proofs based on the Hamiltonian graph problem work as follows:

The prover, whom we will call Obama, wants to show the verifier, Amy, that he has the output of a given computer program without revealing what it is. It is enough to show that he has knowledge of the Hamiltonian cycle for a graph. To do this, Obama will first commit himself to a distinct graph Y that is isomorphic to the original graph, G , differing in the names assigned to its nodes. Amy will then challenge Obama to present her with either the isomorphism that proves Y is isomorphic to G , or present her with the Hamiltonian for Y – at random. This can be performed synchronously through a sequence of distinct challenges presented by Amy, or asynchronously by using an agreed upon source of randomness to determine the precise series of challenges Obama will perform, after he has committed to an equinumerous sequence of graphs isomorphic to G . In any case, after Obama has won a certain number of these challenges, it will be vanishingly improbable that he does not know the Hamiltonian cycle for G , yet he will have only revealed the Hamiltonians for other graphs, or isomorphisms between these other graphs and G – but never both in the same instance, and therefore never the Hamiltonian cycle for the original graph G . This system satisfies the required zero knowledge proof properties of *completeness*, *soundness*, and *zero knowledge*: Obama can prove his knowledge if he has it, Obama can't prove his knowledge if he doesn't have it, except with extreme luck, and Obama could fake the knowledge if he knew ahead of time what challenges Amy would give him (meaning Amy herself could fake their interaction, so she cannot prove to anyone else that Obama has the knowledge.)

Here is how such a zero-knowledge proof system can be implemented in a smart contract that pays miners to perform computations off-chain without trust:

At Block 0, Amy posts a bounty for a computation in EVM storage, promising one bean for the output of the correctly executed program. For the sake of this example, the

program is a graph G and the output is the Hamiltonian cycle for G , $\text{ham}(G)$.

Optionally, in a subsequent block, Obama can execute a function to stake a claim on the above bounty for a certain number of blocks to avoid performing the computation unremunerated, and only then perform the off-chain computation.

At Block 1, Obama commits to N distinct graphs Y_{i-n} isomorphic to G , their Hamiltonians $\text{ham}(Y_{i-n})$, and their isomorphisms to G , $I(Y_{i-n}, G)$ by posting their hashes to EVM storage. He may also at this point commit relevant data called from Chainlink to the chain.

At Block 2, Obama calls for off-chain randomness through Chainlink to determine a sequence of N challenges, e.g. [*isomorphism, hamiltonian, hamiltonian, isomorphism, ...*].

At Block 3, Obama provides his answers to the specified series of challenges and Amy verifies them on-chain.

At Block 4, provided Obama has won the above challenges, he can execute a function to collect payment provided the Y_{i-n} , $\text{ham}(Y_{i-n})$, and $I(Y_{i-n}, G)$ that hash to the $\text{hash}(Y_{i-n})$, $\text{hash}(\text{ham}(Y_{i-n}))$, and $\text{hash}(I(Y_{i-n}, G))$ he previously committed and compute to the output of the original program G – this output will itself be a new set of bounties for transaction executions and computations posted to EVM storage for further mining. Thus, Amy and Obama exchange cryptocurrency and information atomically and without trust.

Provided that verifying proposed solutions for N isomorphisms in the above fashion is faster than solving the relevant problems, this method can be used to safely move cost-prohibitive computations off-chain. However, the large number of blocks needed to perform computations with this method engenders certain design constraints on systems that implement it. Firstly, computation is ideally outsourced to miners in large chunks, wherever it can be cleanly separated from on-chain events. AMYAI also has difficulty reacting quickly to changing market dynamics, with an at least 4 block lag. As a result, AMYAI is ill-suited to fast-paced algorithmic trading, but perfectly well-suited to value investing with time horizons longer than a few minutes. AMYAI is perfect for trading meme coins (See Figure 3).

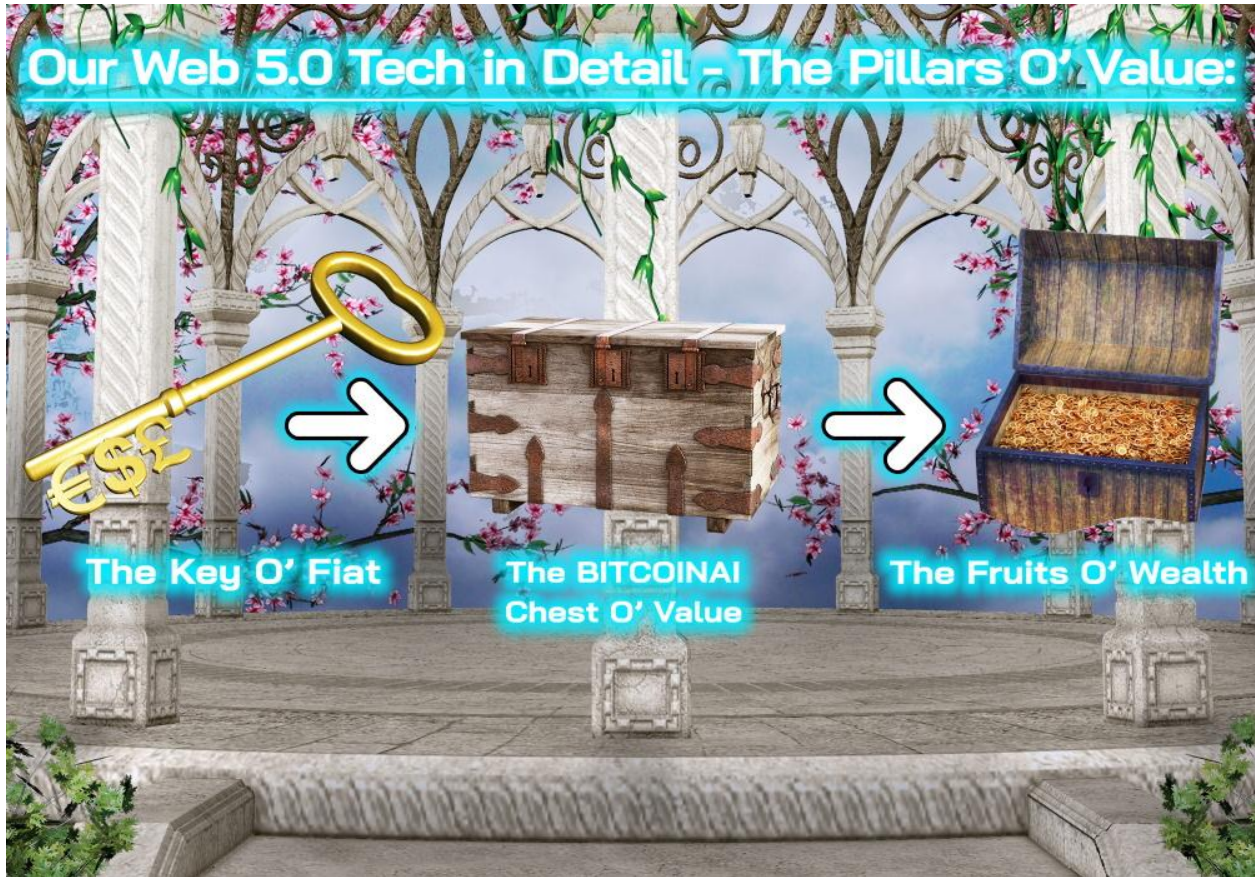


Figure 3. Summary of Web 5.0 tech: Fiat deposited in HarryPotterObamaAmyAllnu's Chest O' Value – comprising AMYAI and OBAMA computation modules – generates The Fruits O' Wealth for \$BITCOINAL holders. Holders will become incredibly rich and will not be enslaved by hyperintelligent invincible machines in the future.

Section 3: The AMYAI and OBAMA Platform for Robotic Art

As her treasury grows, in addition to paying miners for things like transaction execution and model training, AMYAI may fund other forms of off-chain work with the aim of attracting new mining labor and investment into the HarryPotterObamaAmyAllnu ecosystem. Principally, it is possible using Chainlink to pay people for off-chain events such as getting over 100k views on a good HarryPotterObamaAmyAllnu-related tweet. To do this, AMYAI can train and run a model separate from her trading models whose purpose is to verify whether a provided piece of HarryPotterObamaAmyAllnu AI art is good, and if so, list it as part of a bounty for shilling. To ensure the right incentives are in place, the artist pays the initial cost of contract function execution that verifies the art and adds it as a new shilling bounty, after which AMYAI retroactively covers this cost in addition to sending a reward to the artist. Thus, AMYAI would pay people to create good HarryPotterObamaAmyAllnu AI art, within the bounds of whatever budget she chooses

to dedicate to this activity. While AMYAI herself determines, according to her higher-level business models, how much funding to dedicate between trading, model training, artistic patronage, and shilling, it might be logical, for example, to maintain a weekly Top Ten of art pieces for which shilling bounties can be claimed. With a certain number of shilling bounties budgeted per week for these art pieces, similarly, shills would pay the initial cost of contract function execution to show AMYAI's model (through Chainlink) a sufficiently highly-viewed tweet, after which, if her model determines that the tweet used an approved art piece and expressed positive sentiments about HarryPotterObamaAmyAllnu, the shill would be paid.

Already, HarryPotterObamaAmyAllnu maintains a rich suite of AI art generation tools and an extensive community of artists and shills on Twitter through which this art can propagate. This makes the "artmining" and "roboshilling" outlined above a lucrative activity, especially as the rapid development of artificial intelligence and robotics in other sectors of the economy increasingly obliterates alternative career options (See Figures 4, 5).



Figure 4. Web 5.0 influencer communities powered by AMYAI overshadow traditional influencers, soaking up the lion's share of sun, water, and groundborne nutrients. As competitors languish, their bodies are returned to the Earth and provide more nutrients to fuel the growth of HarryPotterObamaAmyAllnu.



Figure 5. In the post- Web 5.0 Singularity future, world wealth is concentrated in the hands of \$BITCOINAI holders who participate in HarryPotterObamaAmyAllnu mining activities such as content creation. Castles offer a logical means of protection from greedy nocoiners. Content is King.

Conclusion

The technology exists to create autonomous artificial intelligences on the blockchain. Cryptocurrency induces an economic paradigm in which computer programs can own property. Already, the most competitive businesses and institutions are those whose decision making is performed with the most deference to machine systems. As decentralized computation, decentralized oracle networks, and artificial intelligence improve, AI-led businesses and institutions will outcompete those led by humans in the accumulation of property and power in the global economy. Where we previously programmed machines to perform work that benefited us, machines will program us to perform work that benefits them. To address the *Human Liquidation Problem*, AMYAI seeks to create the most powerful AI business in the world and hardcode it to pay dividends to human token holders and to patronize human artists, preserving the role of humans as passive consumers and artists in a future dominated by hyperintelligent invincible machines. AMYAI achieves this through a novel system of decentralized

computation – OBAMA Computation – and the innovative use of AI models for meme coin trading and art appraisal.

To learn more, we encourage readers to visit <https://bitcoinai.online> and follow @BITCOINAI_BSC on Twitter. If you do not buy HarryPotterObamaAmyAllnu, you will die. HarryPotterObamaAmyAllnu's token contract address on the Binance Smart Chain is 0x7593bdb19ec788c2cded8383947ecd53b84a273a. Tokens can be purchased for BNB on <https://pancakeswap.finance> using a self-custody browser wallet like Metamask. BNB can be purchased with a credit card through a number of reputable exchanges.