Perspective AI

Jakob Noergaard[1]**, Abdullah Habib**[2]**, Manu Peña**[3]

[1]jakob@perspectivelabs.org, [3]manu@perspectivelabs.org

Abstract. *Centralization in artificial intelligence (AI) has led to innovation bottlenecks, power imbalances, and misalignment with societal needs, creating issues of privacy, censorship, and inequitable resource distribution. Perspective AI addresses these challenges by introducing a decentralized, peer-to-peer AI marketplace. This blockchain-based platform aligns incentives for model creators, users, and infrastructure providers through a token economy. By ensuring privacy, fostering collaboration, and enabling fair compensation, Perspective AI democratizes AI development and access. The ecosystem promotes censorship resistance, unbiased model creation, and community-driven governance, potentially transforming industries from healthcare to finance. This paper outlines the platform's architecture, tokenomics, and use cases, demonstrating how Perspective AI can reshape the global AI landscape by creating a more equitable, innovative, and user-centric environment.*

1. Introduction

Centralization in AI is the concentration of data, resources, and decision-making power within a few dominant entities. This concentration has enabled these entities to significantly influence public opinion and societal norms [1], often reflecting their values and biases. Such power not only limits access to diverse and unbiased perspectives but also blocks innovation and collaboration. As a result, the broader societal benefits of AI are hindered, and users are deprived of ownership and rewards for their contributions.

In response to these challenges, we are introducing a decentralized [2], peer-to-peer AI marketplace that empowers diverse perspectives and fosters collaboration. Our marketplace is designed to ensure privacy and remain censorship-resistant, creating a secure environment for users to access and contribute to AI. Here, AI model creators can monetize their innovations and access structured data for training, while users benefit from a wide array of AI models and earn rewards for their data contributions.

2. Problem

The current AI landscape has significant challenges that stem from its centralization, leading to issues of control, privacy, censorship, bias, and the lack of collaboration and fair compensation for participants [3].

We are already seeing signs of political bias and censorship. Centralized AI systems have been found to exhibit significant biases. For instance, revealed that ChatGPT

leans left on 14 out of 15 political orientation tests [4], highlighting a clear political bias embedded within the model. Another striking example is Google Gemini, which inaccurately depicted the Founding Fathers of the USA as Black, a portrayal driven by political bias rather than historical fact. These examples are just the tip of the iceberg, with many more instances of bias—some so subtle they often go unnoticed. While listing them all is beyond the scope of this white paper, the prevalence of such biases in AI is a significant and ongoing concern.

Centralization also blocks innovation and excludes the broader community from sharing in the benefits of AI. Users contribute valuable data but are neither rewarded nor given ownership, while model creators struggle to access diverse data at scale and to monetize their models.

Finally, centralized AI can fail to reflect the diverse social and cultural values of its users. Without user input and governance, AI models often miss the mark on cultural adaptation and ethical alignment, resulting in outputs that are irrelevant or even offensive to certain communities [5]. Additionally, centralized control prevents localized governance, where communities could otherwise tailor AI behavior to their specific norms and values. This lack of user-driven customization further alienates users and diminishes the relevance and usefulness of AI in a diverse world.

With millions of users around the world relying on AI for daily decisions, the impact of these biases and lack of user control is far-reaching, shaping perspectives and influencing choices on a potentially dangerous scale.

The core problem is that current AI offerings are lacking a rewarding ecosystem and failing to provide a decentralized alternative that empowers users. Users and model creators need to have their incentives aligned in a free market. Model creators need access to uncensored compute for hosting and training, access to data for training from users and access to users for monetizing their AIs. Users need access to uncensored/diverse AIs and access to earning money by contributing their data.

3. Solution: Perspective AI

Perspective AI is a decentralized AI marketplace where model creators, model users, and infrastructure providers come together. Our ecosystem aligns incentives for all participants and addresses the needs of both AI model creators and users, fostering a vibrant, collaborative environment for AI development and utilization.

Key Features

1. **Decentralized:** Our platform operates on a distributed network, eliminating single points of failure and ensuring resilience.
2. **Privacy:** We prioritize data protection, employing advanced encryption and secure computation techniques to safeguard user information and model intellectual property.
3. **Censorship Resistant:** The decentralized nature of our platform ensures that no single entity can control or restrict access to AI models or data.
4. **Collaboration:** We facilitate seamless interaction between model creators, users, and infrastructure providers, encouraging knowledge sharing and innovation.

5. **Ownership:** Our platform respects and protects the intellectual property rights [6] of the model creators while enabling fair compensation for their work.

4. The Perspective AI Ecosystem

Our ecosystem, as shown in Figure 1, is designed to empower AI model creators like Bob, AI users like Alice, and the nodes that power the network, creating a decentralized and fair marketplace. To explain our ecosystem, we've taken inspiration from [7], framing the problem with Bob and Alice as our two users. In this collaborative environment, Alice retains ownership of her data and earns rewards whenever it's used, while Bob benefits from access to a diverse, distributed pool of data to build and monetize high-quality AI models. The nodes, run by decentralized participants, ensure the network's security, privacy, and resistance to censorship, making it resilient and free from the control of a select few. Together, these interactions solve the core problems of centralization, fostering a transparent and equitable AI ecosystem where every participant is valued and fairly compensated.
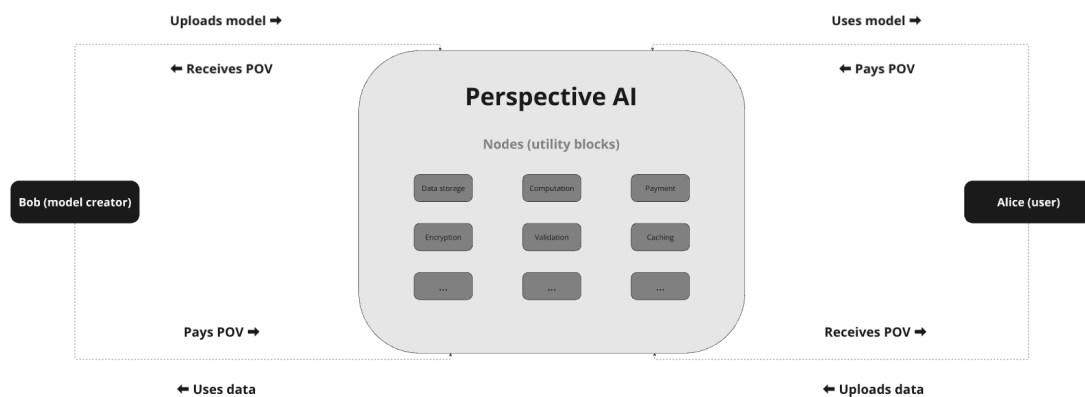
Figure 1. Marketplace ecosystem

4.1. Alice's Perspective: The AI User

As a user, Alice enjoys seamless access to a wide range of AI models through a single account, simplifying her experience and enabling her to explore various AI capabilities effortlessly. Beyond just accessing AI, Alice also contributes valuable data to the network, such as feedback and usage patterns. Importantly, Alice retains full ownership of her data, ensuring her privacy and control over how it's used. Whenever her data is utilized by AI models within the network, Alice is rewarded, allowing her to earn money for her contributions. This system not only empowers Alice but also incentivizes her to actively participate in the AI ecosystem.

4.2. Bob's Perspective: The AI Model Creator

As a model creator, Bob benefits from access to a vast and diverse pool of data provided by users like Alice. This access enables him to develop more accurate and effective AI models that meet the needs of a broad audience. Once his models are integrated into the

network, Bob earns rewards whenever his models are used or accessed by others, providing him with a consistent stream of income. The decentralized nature of the ecosystem ensures that Bob retains intellectual property rights over his creations, while also offering him a platform to scale his models and reach a global audience.

4.3. Infrastructure Providers: The Network's Backbone

The marketplace infrastructure is run by nodes. Nodes can be seen as utility blocks. Each responsible for solving an infrastructure component of the platform. For example, data storage, governance, transaction verification, compute, encryption, hosting etc. Nodes are rewarded with tokens when they provide utility. Figure 2 shows an overview of the marketplace infrastructure. In the future, our end goal is to reach full decentralization of the network through our nodes.
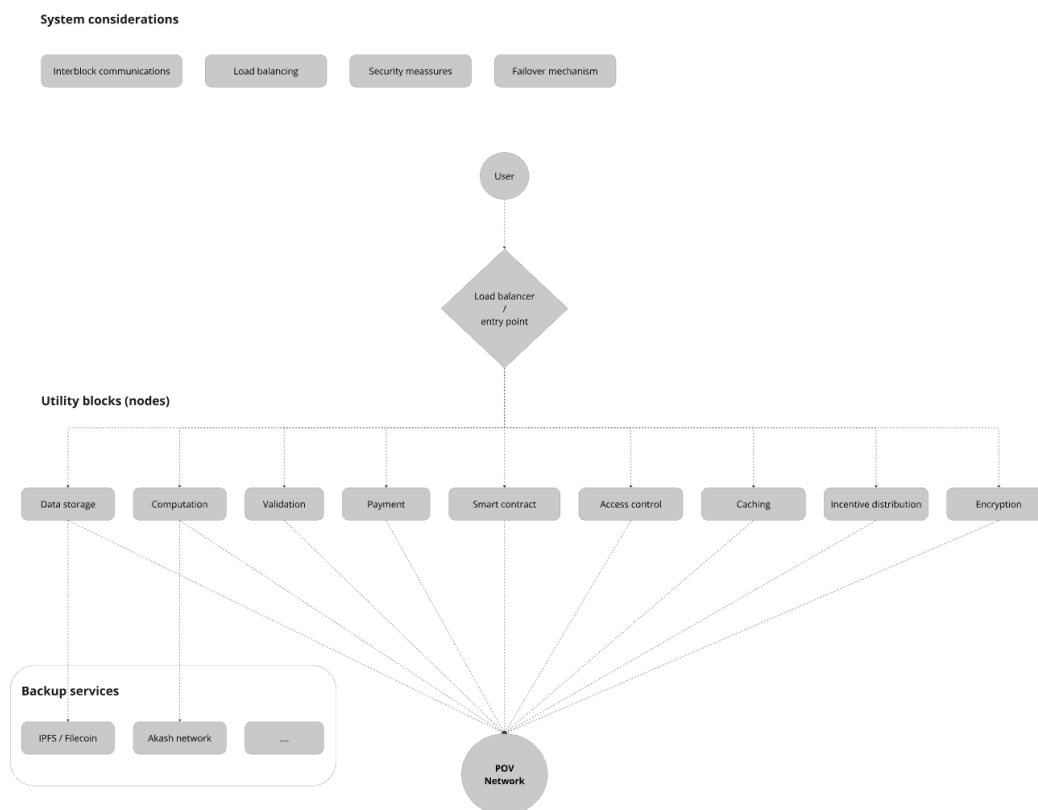
Figure 2. Marketplace Infrastructure

4.3.1. Utility Blocks (Nodes)

Utility blocks are specialized nodes in our network, each responsible for a specific function within the ecosystem. These nodes form the backbone of our decentralized infrastructure, ensuring that all critical operations are distributed across the network. Our utility blocks include:

- Data Storage: Decentralized storage of AI models and datasets.
- Computation: Distributed processing for model training and inference.
- Validation: Consensus mechanism and transaction validation.
- Payment: Processing of POV token transactions.
- Smart Contract: Execution of marketplace rules and agreements.
- Access Control: Managing user authentication and authorization.
- Caching: Optimizing frequently accessed content.
- Incentive Distribution: Allocating rewards to network participants.
- Encryption: Ensuring data security and privacy across the network.

4.3.2. Backup Services

- Integration with third-party services (e.g., Akash Network [8], IPFS [9]) to ensure scalability and reliability during network growth phases

4.3.3. Technical Considerations

- Interblock Communication: Efficient and secure data exchange between utility blocks
- Load Balancing: Dynamic request distribution across available nodes
- Security Measures: Robust encryption and access controls
- Failover Mechanism: Seamless transition to backup services when required

4.3.4. Gradual Decentralization

Our approach allows for a phased transition from partially centralized to fully decentralized operations, ensuring system stability and scalability throughout the network's growth. Each infrastructure component can be gradually decentralized as they become technically and economically feasible.

Benefits
- True decentralization of AI model hosting and computation [10]
- Enhanced data privacy and security
- Fair compensation for all ecosystem participants
- Scalable infrastructure adaptable to growing demand
- Democratized access to AI technologies

Through this architecture, we aim to create a revolutionary marketplace that democratizes AI, ensuring fair access, compensation, and innovation in the field of artificial intelligence.

Together, Alice, Bob, and the infrastructure providers form a vibrant, collaborative environment where every participant is empowered, rewarded, and protected, creating a truly decentralized and resilient AI marketplace.

By facilitating this level of collaboration we are creating an ecosystem where data and innovation can flow freely. This approach not only enhances the quality and variety

of AI models but also ensures that all contributors are fairly compensated, promoting a sustainable and equitable AI development environment.

1. Model creators can monetize their AI innovations directly, accessing a large user base without the need for individual marketing efforts.
2. Users gain streamlined access to a diverse array of AI models through a single platform, eliminating the need for multiple accounts and subscriptions.
3. Users are financially incentivized to contribute high-quality data, ensuring fair compensation for their valuable input to AI development.
4. Individuals are also incentivized to contribute and maintain the network through owning and operating nodes.
5. The platform is built with blockchain technology at its core, ensuring transparency, security, and distributed control.

4.4. Routing AI for general use

We offer users two ways to interact with our marketplace of specialized AI models. Users can either directly select and use specific AI models tailored to their needs, or optionally leverage our Routing AI.

The Routing AI [11], acts as an intelligent intermediary, sitting atop our AI marketplace. When engaged, it analyzes user queries and automatically directs them to the most suitable AI model or combination of models within our ecosystem. Figure 3 shows a visual workflow of Routing AI. The process is seamless, with users receiving comprehensive answers without needing to switch between models.

By offering both direct model access and the optional Routing AI, advanced users can hand-pick models for their specific requirements, while those seeking a more streamlined experience can rely on the Routing AI to optimize their interactions while still benefiting from all specialized models.
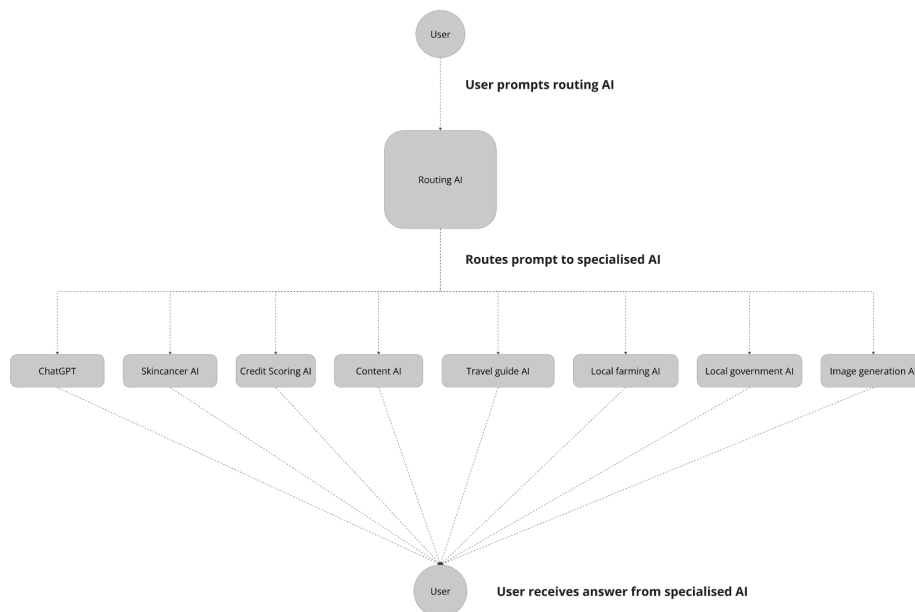

Figure 3. Routing AI

4.5. Governance and Network Evolution

The Perspective AI token (POV) also plays a central role in the governance of the platform. Token holders—whether they are users like Alice, creators like Bob, or infrastructure providers—can participate in voting on proposals and protocol upgrades. This democratic approach ensures that the network evolves in line with the collective interests of its participants, maintaining a balance between innovation, security, and fairness. By staking tokens, participants can amplify their influence in governance decisions, further aligning their success with the overall health and growth of the ecosystem. Our token ensures that all participants are fairly rewarded, incentivized, and empowered. Whether it's enabling Alice to access AI services and earn rewards, allowing Bob to monetize his models and drive innovation, or ensuring infrastructure providers maintain the network's integrity, the token is integral to the success and sustainability of our marketplace.

5. Use Cases

The decentralized and unbiased nature of Perspective AI opens up a wide array of applications across various industries. By fostering collaboration and ensuring equitable rewards, our platform is poised to drive innovation and efficiency in numerous fields. Below are examples that illustrate the potential impact and versatility of Perspective AI:

5.1. Healthcare: Medical Research

Medical Image Analysis A radiologist develops a specialized AI model for detecting early-stage lung cancer in CT scans. Through Perspective AI, model creators can monetize their model by offering it to hospitals and clinics worldwide, gain access to a diverse dataset of anonymized CT scans, improving the model's accuracy, and collaborate with other specialists to enhance the model's capabilities. [12] shows some promising applications of Decentralized AI in Healthcare. Users benefit from access to cutting-edge diagnostic tools without significant upfront investment and the ability to contribute anonymized medical data, earning rewards while advancing medical research.

5.2. Censorship Resistance: Creating Unrestricted Content and Workflows

A developer uses the platform's API to build an AI-driven content creation tool that allows users to generate and share politically sensitive or controversial content without fear of censorship. Unlike centralized platforms, which may block or restrict such content due to external pressures, our decentralized infrastructure ensures that all voices can be heard, enabling the creation and distribution of information that might otherwise be suppressed.

5.3. Societal Shaping: AI Models Aligned with Local Beliefs

AI models can be tailored to reflect a country's local beliefs and societal norms. This ensures that responses are culturally relevant and protects the diversity of perspectives around the world. This decentralized approach allows communities to shape AI behavior according to their values, something centralized systems often overlook.

5.4. Finance: Community-Governed Credit Scoring

AI-driven credit scoring models [13] are governed by the community, with users contributing financial data while maintaining control and earning rewards. This contrasts with centralized institutions that impose opaque and biased scoring systems.

5.5. Agriculture: Localized Farming Solutions

AI models tailored to local farming conditions and cultural practices are developed with data contributed by farmers, who retain ownership and receive rewards. Centralized solutions often fail to address these specific needs effectively.

5.6. Government and Business: Privacy-Driven AI Solutions

Governments and businesses can deploy AI models without exposing sensitive data to centralized platforms, ensuring full control and confidentiality. Centralized alternatives like ChatGPT can't match this level of privacy and data security.

These examples highlight how Perspective AI not only facilitates innovation but also ensures that both creators and users are fairly compensated and empowered through a decentralized platform. This collaborative environment allows the benefits of AI to be applied effectively to address real-world challenges across various domains.

6. Conclusion

In conclusion, our ecosystem represents a transformative shift in the artificial intelligence landscape, introducing a fully decentralized marketplace that democratizes access to AI technology while ensuring fair rewards for everyone involved. By embracing true decentralization, our platform eliminates single points of failure, resists censorship, and fosters resilience through a distributed network of nodes.

This unique ecosystem brings together multiple stakeholders—users who can monetize their data, model creators who access diverse datasets and are fairly compensated, and infrastructure providers who maintain the network's integrity. With robust infrastructure, inclusive rewards, and a strong emphasis on security and privacy, our platform addresses the industry's most pressing challenges, such as centralization, data bias, and insufficient incentives. The Perspective AI platform is more than just a marketplace; it's a community-driven approach to AI development, laying the foundation for a more collaborative, innovative, and equitable future in artificial intelligence.

References

[1] K. Birch and K. Bronson, "Big tech," *Science as Culture*, vol. 31, pp. 1–14, Feb. 2022.

[2] A. Y., "A review on decentralized artificial intelligence in the era of large models," May 2024, preprint or Report.

[3] N. Baranwal Somy, K. Kannan, V. Arya, S. Hans, A. Singh, P. Lohia, and S. Mehta, "Ownership preserving ai market places using blockchain," in *2019 IEEE International Conference on Blockchain (Blockchain)*. IEEE, Jul. 2019. [Online]. Available: http://dx.doi.org/10.1109/Blockchain.2019.00029

[4] D. Rozado, "The political biases of chatgpt," *Social Sciences*, vol. 12, no. 3, 2023. [Online]. Available: https://www.mdpi.com/2076-0760/12/3/148

[5] A. 19 and P. International, "Privacy and freedom of expression in the age of artificial intelligence," *article19*, 2018.

[6] V. Kersic and M. Turkanovic, "A review on building blocks of decentralized artificial intelligence," 2024. [Online]. Available: https://arxiv.org/abs/2402.02885

[7] R. L. Rivest, A. Shamir, and L. Adleman, "A method for obtaining digital signatures and public-key cryptosystems," *Communications of the ACM*, vol. 21, no. 2, pp. 120–126, Feb. 1978. [Online]. Available: https://doi.org/10.1145/359340.359342

[8] A. Network, "Akash network whitepaper," 2024, accessed: 2024-08-17. [Online]. Available: https://whitepaper.io/document/633/akash-network-whitepaper

[9] IPFS Documentation, "Defining ipfs," 2024, accessed: 2024-08-17. [Online]. Available: https://docs.ipfs.tech/concepts/what-is-ipfs/#defining-ipfs

[10] J. D. Harris and B. Waggoner, "Decentralized and collaborative ai on blockchain," in *2019 IEEE International Conference on Blockchain (Blockchain)*. IEEE, Jul. 2019. [Online]. Available: http://dx.doi.org/10.1109/Blockchain.2019.00057

[11] C. Aswini and M. Valarmathi, "Artificial intelligence based smart routing in software defined networks," *Computer Systems Science and Engineering*, vol. 44, pp. 1279–1293, Jan. 2023.

[12] A. Narayan, K. Weng, and N. Shah, "Decentralizing health care: History and opportunities of web3," *JMIR Formative Research*, vol. 8, p. e52740, Mar 2024.

[13] W. Addy, A. Ajayi-Nifise, B. Bello, O. Odeyemi, and T. Falaiye, "Ai in credit scoring: A comprehensive review of models and predictive analytics," *Global Journal of Emerging Technology and Advances*, vol. 18, no. 2, pp. 118–129, Feb. 2024.