2PM. Network

Privacy-Computing AI Model Networks for the Ethereum Public

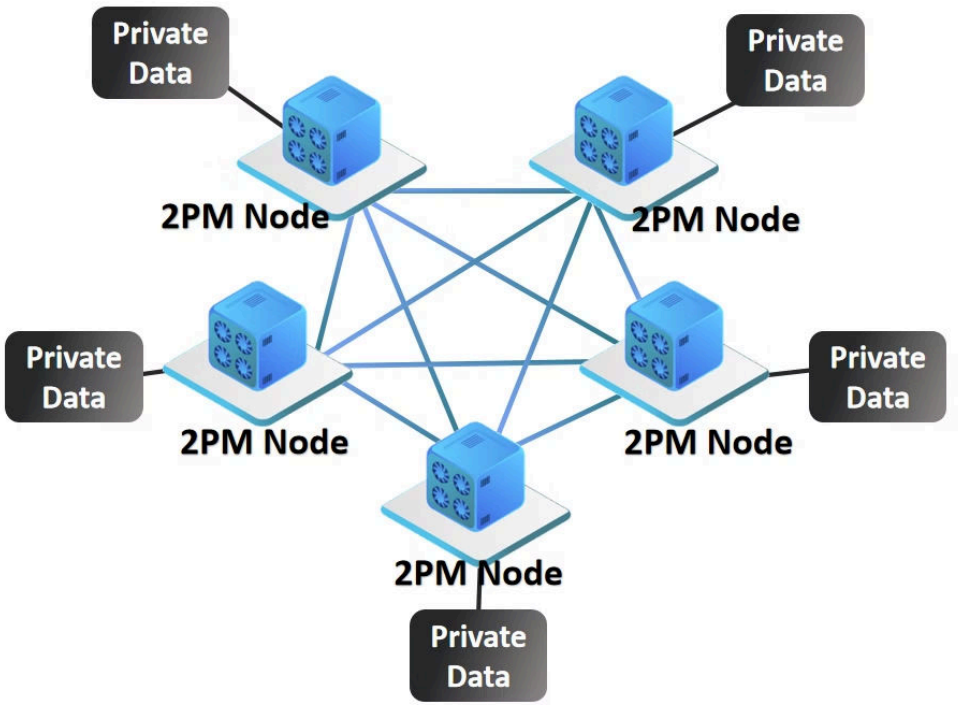
Problem Statement

- **Data Privacy:** Growing concerns over data privacy and security.

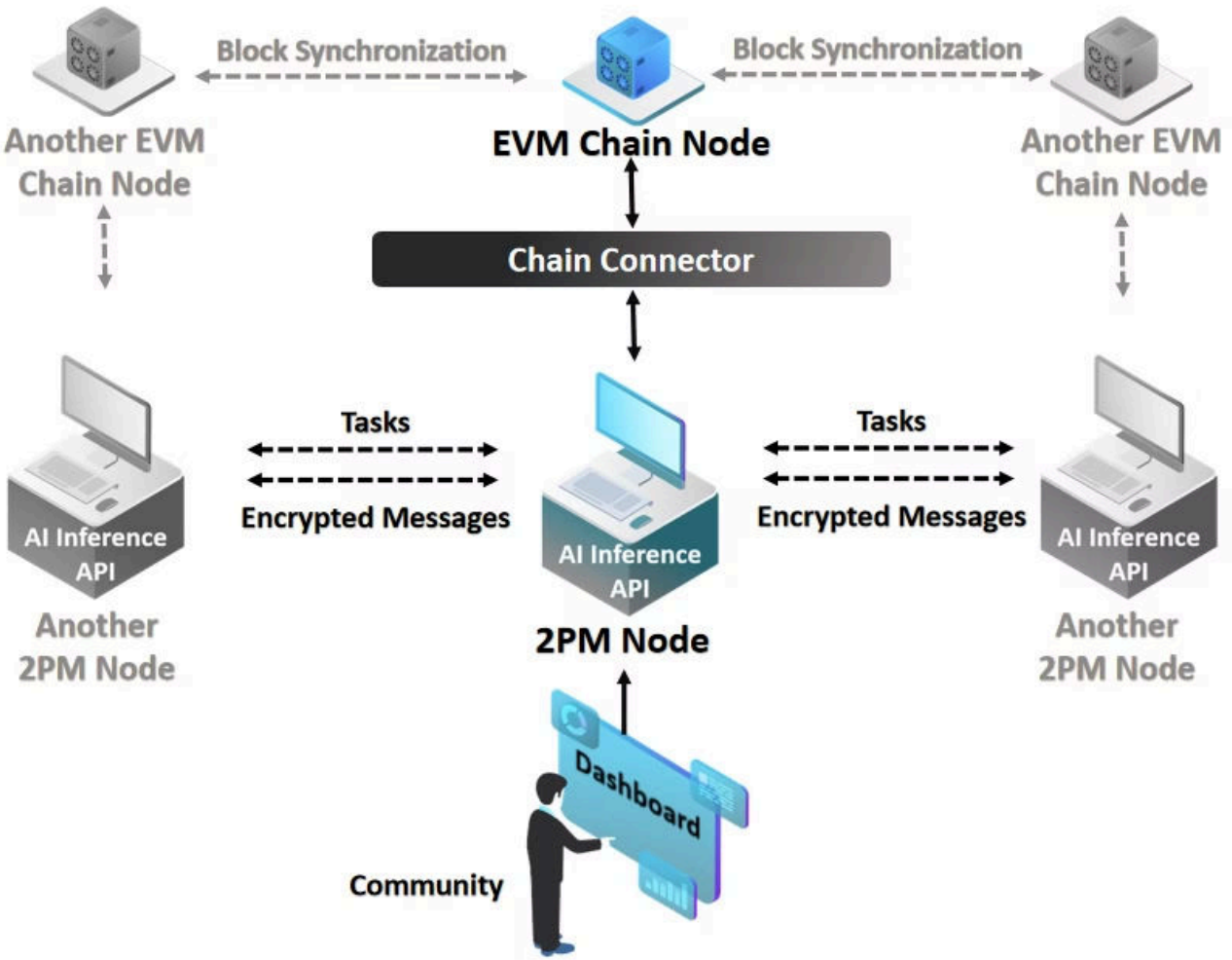
- **Data Traceability:** Difficulty in verifying the source and integrity of data and computation process.

- **AI Accessibility:** No access to AI models trained by privacy data for the public.

2PM. Solution - Privacy Computing Network



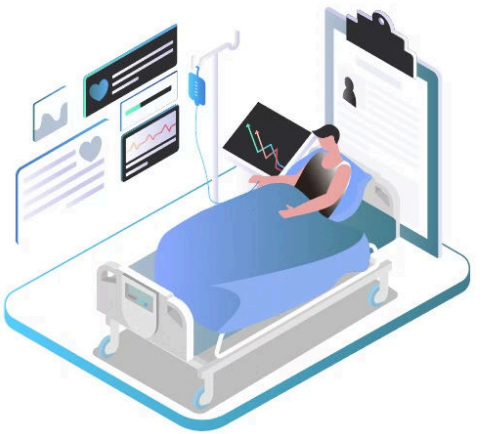
2PM. Solution - Network Architecture



2PM. Solution - AI Application Inference Networks

"One Network, One AI, One Application" = Many Public Goods that creates positive externalities

Private Conversation (LLM)

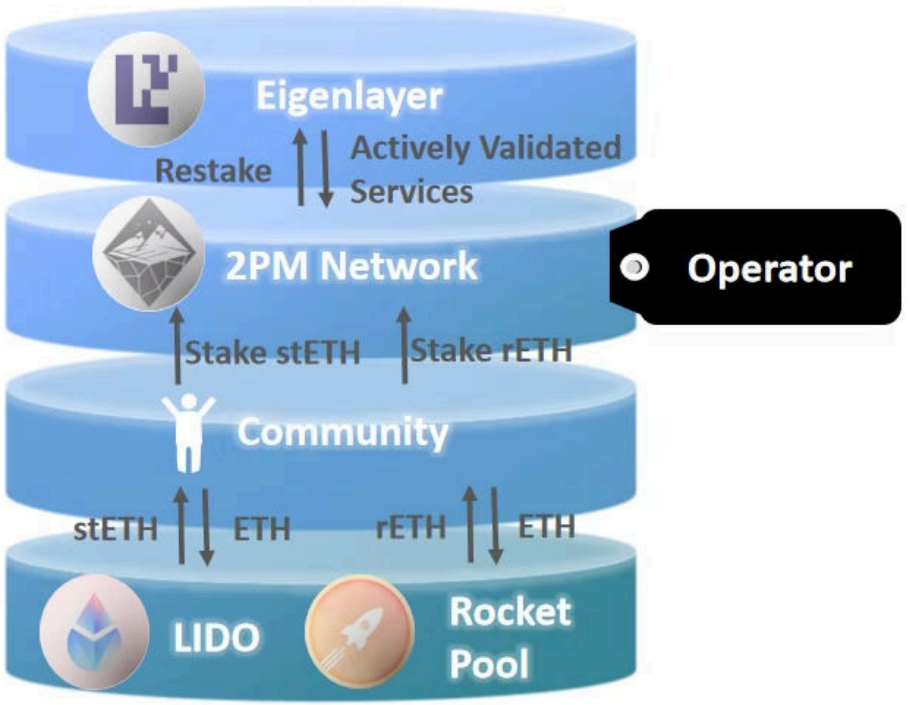


Diagnosis of Diseases (Logistics)

Personal Financial Information (Regression)

2PM. Solution - Staking and Restaking for AVS

"To enhance the security of the verification and the boarder ETH ecosystem"



Benefits for Ethereum

Staking Ethereum:

- **Increased Utility**: Users must stake Ethereum to access AI inference APIs, increasing the demand and utility of Ethereum.
- **Network Security**: Staking enhances the security and stability of the Ethereum network by encouraging long-term holding.

Attracting Users:

- **Broader Adoption**: By offering valuable AI services, 2PM.Network attracts new users to the Ethereum ecosystem.
- **Engagement**: Users are incentivized to contribute private data, increasing active participation and engagement within the Ethereum network.

Public Goods:

- **Community Support**: Provides a public good by making Privacy-Protected AI models accessible, aligning with Ethereum's goal of supporting decentralized, community-driven projects.

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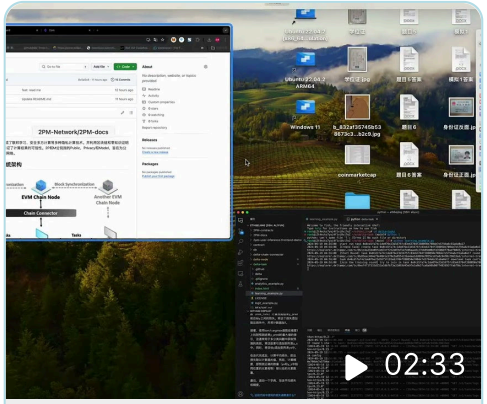
- **IdentityContract:** Manages node identities within the network. It ensures secure and authenticated participation of nodes in the federated learning process.
- **HFLContract:** Handles horizontal federated learning tasks, enabling collaboration among multiple nodes without sharing raw data.
- **DataHub:** Manages node data, ensuring secure storage, access, and retrieval of data required for federated learning.
- **HLRContract:** Executes horizontal logistic regression tasks, facilitating collaborative model training across multiple nodes.
- **PlonkVerifier3:** Verifies zero-knowledge proofs with an input length of 3, ensuring data integrity and privacy during the learning process.
- **StakingContract:** Allows users to stake stETH/rETH to the 2PM Network or delegate those LSD to the 2PM Network via Eigenlayer. The contract includes basic staking and delegation functions and records staking and delegation information.

Application Demo

Our 2PM Network Application demo uses the Spector and Mazzeo (1980) Program Effectiveness Data to perform a logistic regression federated learning task. This experimental dataset evaluates the Personalized System of Instruction (PSI) program's impact on student performance. The key variables include:

- **Grade**: Binary indicator of grade improvement (1 for improvement and 0 for no improvement)
- **TUCE**: Economics test score
- **PSI**: Participation in the program
- **GPA**: Grade point average

The objective is to predict whether a student's grade will improve through participation in the PSI program.



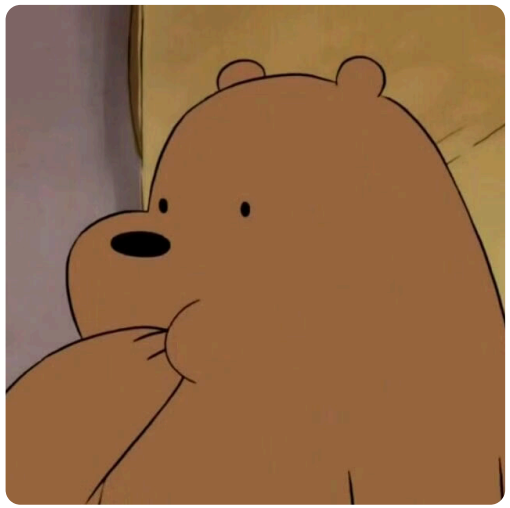
This Demo contains:

- **Network Model Training (Privacy Computing)**
- **User Inference Request (Public Application)**

Roadmap

1. **2024Q2: MVP Launch: Initial deployment and testing of the privacy computing network.**
2. **2024Q2: Feature Expansion: Adding more AI models (*Llama*) and improving user interface.**
3. **2024Q3: Partnerships: Collaborating with data providers and AI developers.**
4. **2024Q3: Community Building: Engaging with the community for feedback and improvements.**

Team



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FAQ

Thank you, Join us and Contribute