Open Source Global Al Model: The collectively trained

Analytics Dashboard: Interface for visualizing insights

API Services: Integration points for external applications

model available for public benefit

to access model predictions

and monitoring system performance

## Problems We're Solving & Why We're Doing This:



Traditional AI model training requires centralizing sensitive data, creating privacy risks and limiting collaboration.

We're enabling privacy-preserving collaborative AI by allowing organizations to contribute to powerful models without sharing raw data, while being rewarded for their participation.

We're transforming how communities solve shared challenges by making it possible to collaboratively build Al public goods without sacrificing data privacy or local control. This enables organizations to pool their insights safely to tackle pressing social and environmental problems while being rewarded for their contributions.

- Food Security: Food banks share insights without exposing vulnerable populations
- Healthcare: Hospitals collaborate on diagnostic models while protecting patient data
- Climate Action: Environmental organizations combine local data for better climate modeling
- Disaster Response: Aid organizations coordinate resources while protecting sensitive details
- Educational Equity: Schools improve learning outcomes while protecting student privacy

## **Decentralized Federated Learning Architecture**

## **System Architecture** The foundation of the system where participants (like food banks, environmental stations, or healthcare providers) **Data Sources Layer** contribute their local datasets. Data Node 1 Each node maintains data sovereignty - raw data never **Local Dataset** leaves these local environments, preserving privacy and regulatory compliance. Bata Node 2 **Local Dataset Secure Data Flow** Data Node 3 **Local Dataset Privacy-Preserving Federated Learning Privacy Mechanisms Rewards & Governance** Homomorphic Encryption **Local Training Global Aggregation** Differential Privacy **Model Synthesis** Model Updates Secure MPC The blockchain infrastructure that The core ML infrastructure where: powers the platform: Local Training: Each node trains models Smart Contracts: Automate model on their own data update verification, reward Privacy Mechanisms: Implements distribution, and governance rules Blockchain (NEAR) Layer Incentive System: Manages token advanced cryptographic techniques to **Model Updates** ensure data privacy rewards for quality data • Global Aggregation: Combines encrypted **Smart Contracts** contributions and computation model updates into a unified global model resources Governance: Enables decentralized **Incentive Systems** decision-making for protocol upgrades and parameter adjustments Governance **Platform & Interface** The user-facing components that deliver value: **Application Layer**

**Analytics Dashboard** 

**Impact Measurement** 

**API Services** 

**Open Source** 

**Global Al Model**