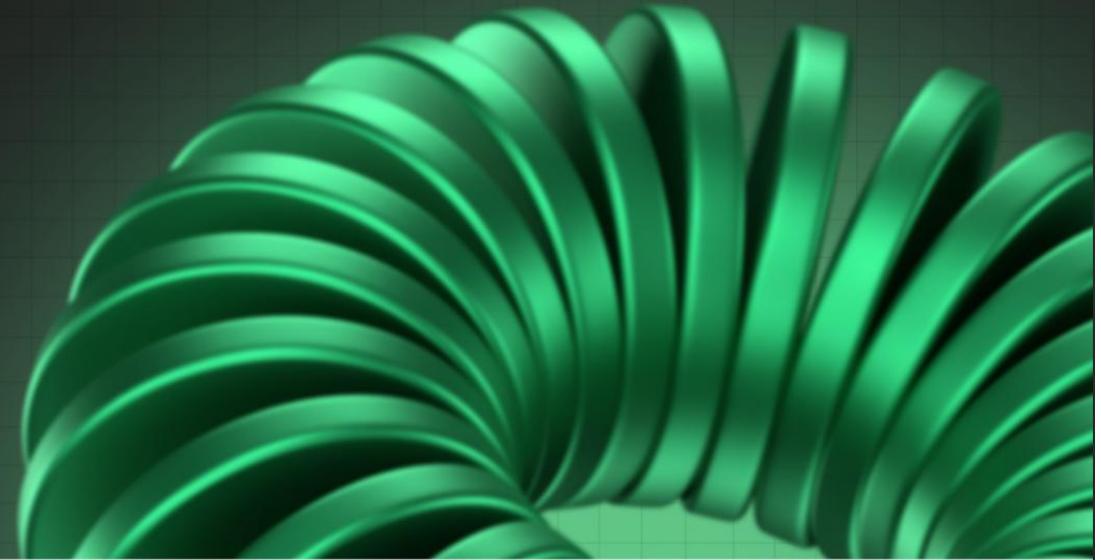


**Advance your ideas at  
India blockchain week**



**Team Name : DeCodeChain**

**Team Leader Name : Kush**

**Problem Statement : User Are Forced to Sacrifice Personal Data Ownership And Privacy To Gain The Benefits Of Personalized Ai Assistants**



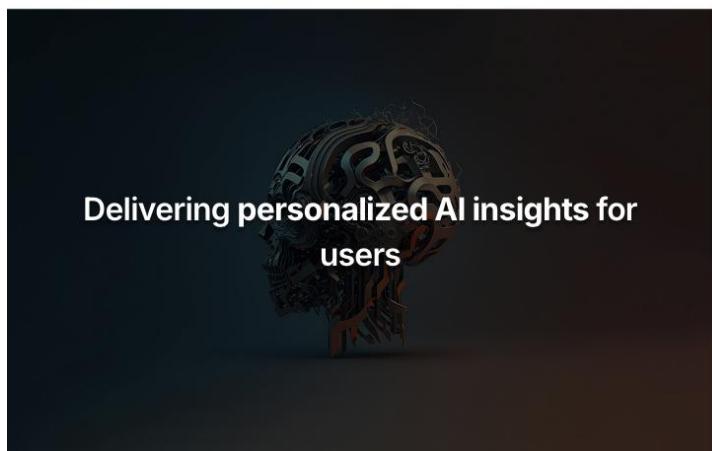
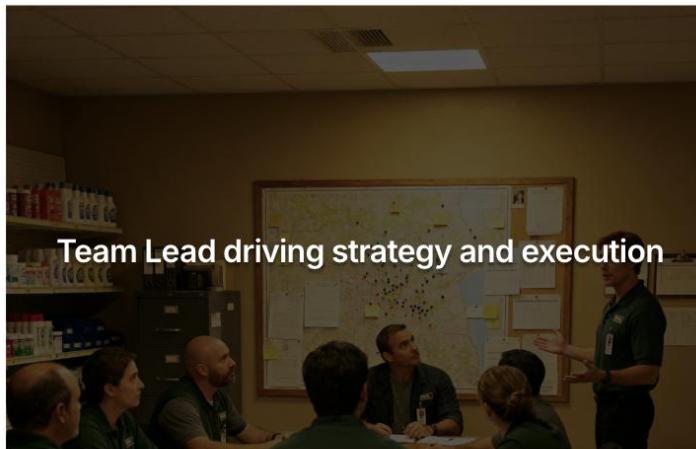
# NEBULA: Your Private AI Life-Copilot

Private, decentralized AI assistant built on Cardano Hackathon Asia; balances personalized insights with user control over sensitive data.

Luv,Kush

# Meet Our Team

Team DeCodeChain — building NEBULA with privacy-first personalized AI



# The Problem: Utility vs. Privacy

Personalized AI improves utility but increases exposure of sensitive data



Users want **personalized AI** for health, finance, and productivity



Requires sharing **highly sensitive information** with centralized corporations



Tradeoff: improved **utility** vs. escalating **privacy risks**



Privacy risks include **data leaks, misuse, and surveillance**



No widely adopted solution yet that delivers deep personal AI insights **without compromising privacy**



This gap is the primary problem **NEBULA** aims to fill

# NEBULA — Private, Decentralized Personal AI

Unified app combining Cardano, Midnight, and Masumi to deliver private health, productivity, and finance assistance



**Cardano:** secure on-chain dashboard for goal setting, insights, and immutable state



**Midnight:** zero-knowledge smart contracts that analyze sensitive data without exposing raw inputs



**Masumi AI Agents:** decentralized network of agents interpreting private patterns and personalizing actions



**Outcome:** **private, personalized** assistance across health, productivity, and finance without revealing raw data

# Our Opportunity & Unique Selling Proposition (USP)

Privacy-first AI that links finance, mental health and productivity without exposing raw data



**Privacy-first design:** Cannot access raw user data; operates via **zero-knowledge proofs**



Breaks the **utility–privacy tradeoff**, enabling practical mainstream privacy-enhanced AI



Holistic **life copilot**: connects financial habits, mental health, and productivity for cross-domain insights



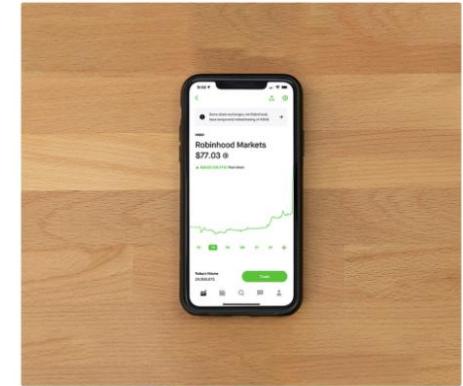
Actionable insight example: correlate **financial stress** with **sleep patterns** for targeted interventions



USP: **Highly personalized AI insights** without personal data exposure

# Key Features

Privacy-first AI agents delivering insights across wellness, finance, productivity, and Cardano-native automation



## ZK-Powered Wellness Journal — Mood Agent

- Analyzes private journal entries for emotional insights
- Operates with zero-knowledge privacy guarantees
- Supports personalized wellbeing feedback loops

## Private Financial Advisor — Finance Agent

- Uses zero-knowledge proofs on bank transactions
- Provides tailored savings and budgeting recommendations
- Maintains transaction privacy while delivering insights

## Decentralized Habit & Productivity — Life-Copilot Agent

- Monitors habits, goals, and progress autonomously
- Delivers contextual productivity guidance
- Operates within decentralized, privacy-preserving framework

## Unified Cardano Dashboard & Automation

- React-based dashboard aggregates agent insights
- Automated micro-fee payments via ADA for AI tasks
- Fully decentralized execution and payment flow

# How It Works: NEBULA Process Flow

Private user data → Midnight ZK-VM → Masumi AI Agents → DApp feedback, with Cardano goals and wallet-signed micro-fees

## User Input

- User enters private data (e.g., journal entry) in NEBULA DApp; Cardano public goals are set

## Secure Forwarding

- DApp securely forwards private data to Midnight's **ZK-VM** for confidential handling

## ZK Processing

- Midnight ZK-VM processes sensitive data and outputs **zero-knowledge proofs** without revealing raw inputs

## Proof Delivery

- ZK proofs are delivered to **Masumi AI Agents** as verification of computations

## Insight Generation

- Masumi Agents combine proofs and Cardano public goals to produce personalized insights

## Authorization & Micro-fees

- Task requests are signed via the user's Cardano wallet to authorize micro-fee payments

## Results to User

- Personalized insights are returned to the NEBULA DApp respecting user sovereignty

# Wireframes

NEBULA interface overview: balanced data visualization and AI recommendations

**1 Unified Dashboard: widget-based layout**  
Clean layout aggregating **Wellness**, **Productivity**, and **Finance** metrics for quick overview.

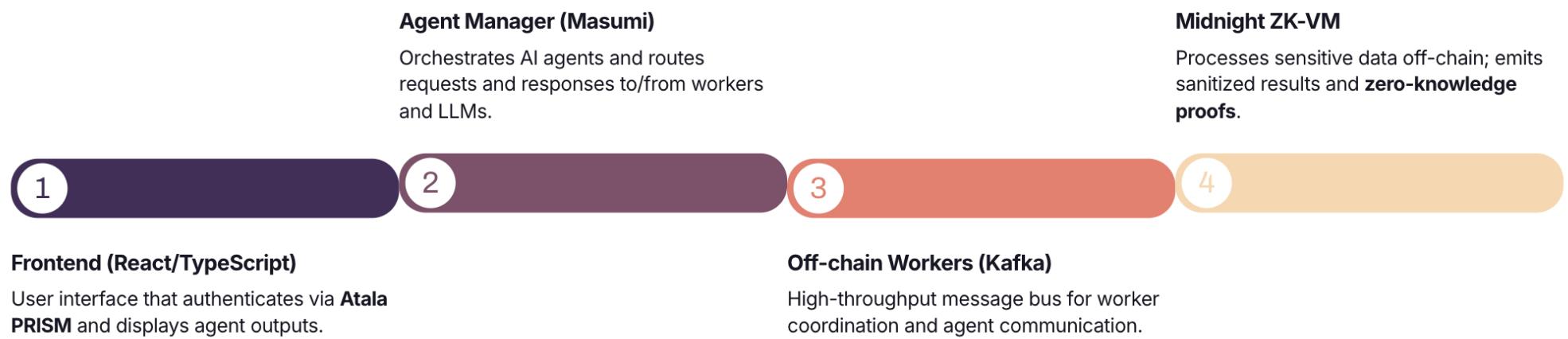
**2 Wellness Widget: mood trends & AI insights**  
Charts showing mood trends plus AI insights linking improvements to workouts for actionable guidance.

**3 Finance Widget: savings progress & suggestions**  
Progress bars for savings goals with AI-driven, actionable budget adjustment suggestions.

**4 Design Focus: usability and engagement**  
Balance visual data and AI recommendations to foster engagement and actionable decisions.

# System Architecture

Private, decentralized AI workflow integrating ZK, agents, LLMs and Cardano



# Tech Stack & Integration

Private data protection with zk-proofs, on-chain goals and ADA payment verification



## Frontend & Identity

- React With **TypeScript** For UI
- **Atala PRISM** For Decentralized Identity Management



## Blockchain & Smart Contracts

- **Cardano** With **Plutus** Smart Contracts
- Public Goals And **ADA** Payment Verification On-Chain



## Privacy & ZK Processing

- **Midnight** Zero-Knowledge Virtual Machine
- Outputs Only **Zk-Proofs**; Raw Private Data Stays Inaccessible



## AI, Storage & Backend

- Decentralized AI Via **Masumi AI Agent Framework**
- Backend: **Kafka, Redis, IPFS, LLM Clusters**

# Estimated Implementation Cost

Comprehensive cost categories to support budgeting and investor confidence



**Development:** design, smart contracts, ZK integration, AI model engineering



**Testing & QA:** unit tests, integration, ZK proof validation, security audits



**Deployment:** blockchain transaction fees, node provisioning, CI/CD



**Infrastructure:** zero-knowledge computation resources, scalable storage, networking



**AI Hosting:** model hosting, inference cost, GPU/TPU instances, monitoring



**Ongoing Maintenance:** updates, support, compliance, contingency budget



**Investor Note:** detailed budgeting required for feasibility and confidence

# Thank You

Questions welcomed — NEBULA team (DeCodeChain) invites further discussion and access to our source code repository

Cardano  
**HACKATHON ASIA**  
IBW Edition 2025

Innovation partner **H2S**  
HACK2SKILL

# Thank you

