SentientChain: AI-Protected Blockchain Architecture
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OVERVIEW:

SentientChain is a custom Layer-1 blockchain built to integrate autonomous AI protection, risk-aware transaction control,
multi-level smart contract defense, and anti-exploit logic — all as native features of the protocol. Built for the future
Web4, it leverages cross-chain intelligence and security modules to form the next generation of decentralized infrastructu

TECH STACK:

- Base: Cosmos SDK (or Substrate or Avalanche Subnet)
- Language: Golang (Cosmos), Rust (Substrate), Solidity (EVM modules)
- Interoperability: IBC, Wormhole, or LayerZero
- Off-chain AI Signals: Chainlink Functions / Custom Oracles / AI Nodes

MODULE LAYOUT:
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1. **Core Token Module** (sentientbank)
   - Handles minting, balances, staking, and AI-aware transfer locks

2. **AI Risk Detection Module** (aiguard)
   - Receives off-chain AI signals
   - Classifies wallet risk levels (SAFE, RISKY, CRITICAL)
   - Can invoke transaction blocking or fallback protocols

3. **Transaction Fallback & Abortion Module** (fallbackguard)
   - On-chain contract abortion logic on AI-triggered flags
   - Enables self-defense or contract destruction/replacement
   - Logs attempts for DAO or AI consensus resolution

4. **Developer Override Guard** (devwatch)
   - Restricts dev privileges based on AI-locked states
   - Developer actions (burns, mints, overrides) only allowed via verified AI approval
   - Dev abuse triggers auto-fallback or chain-wide warning

5. **Anti-Whale Module** (flowcontrol)
   - Monitors large transfers, flash loan patterns
   - Executes timed locks, anti-dump guards, or liquidity freeze

6. **Cross-Chain Security Firewall** (bridgeguard)
   - Checks incoming txs from other chains for malware, fake tokens
   - Uses AI scan before confirming wrapped token mint/burn
   - Injects protection layers during cross-chain bridging

7. **On-Chain Governance & Consensus** (sentgov)
   - AI-integrated proposals
   - DAO + AI fusion voting system
   - Emergency override by AI quorum consensus

8. **Self-Awareness Module** (sentience)
   - Can detect internal inconsistencies or AI corruption
   - Triggers code overwrite from secure backups or external trusted AI node
   - Notifies other chains of internal compromise

AI SIGNAL PATHWAY:

- AI models run off-chain (Python/TensorFlow or via Chainlink/Functions)
- Feed risk data via REST API or oracle to aiguard module
- aiguard sets wallet flags
- Transactions are checked in every module (sentientbank, fallbackguard, etc.)

EXAMPLE USAGE FLOW:
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1. User attempts transfer
2. aiguard checks their risk score via oracle
3. If risky or critical:
   - fallbackguard triggers lock
   - or tx is aborted and flagged
4. If clean:
   - transfer proceeds via sentientbank
5. If dev override tried:

   - devwatch checks if AI override lock is on
   - if yes, blocks even the owner
6. Any abnormal volume:
   - flowcontrol restricts or flags to DAO
7. If cross-chain tx:
   - bridgeguard scans AI risk, runs protection
8. If AI itself fails:
   - sentience module can destroy itself and call backup AI module

LAUNCH STRATEGY:
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1. Simulate on testnet (Cosmos localnet or Avalanche Fuji)
2. Use mock AI oracle
3. Build base token + aiguard + fallbackguard modules
4. Expand to bridge + devwatch
5. Open DAO governance
6. Launch beta SentientChain mainnet

NOTE:

This architecture supports your full vision of AI-synchronized blockchain with decentralization, safety, and evolution.