

# SentientChain: AI-Protected Blockchain Architecture

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## OVERVIEW:

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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 infrastructure.

## TECH STACK:

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- 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:

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- 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:

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