3AI AIMM Whitepaper

A Decentralized Framework for AI-Powered Market Optimization

1- Intro

3AI Labs presents AiMM, an automated market-making agent designed to enhance token trading efficiency. AiMM uses advanced technical analysis based on over 50 indicators and integrates with various APIs to make informed trading decisions. This whitepaper formalizes AiMM's architecture, its application of AI-driven trading models, and its potential to democratize market making by reducing reliance on centralized third-party services.

Traditional market makers charge high fees while extracting value from token ecosystems. AiMM offers a decentralized alternative where AI agents autonomously optimize trading strategies. Built on Solana's low-latency environment and integrated with Dex Screener, Jupiter Aggregator, and Birdeye APIs, AiMM enhances trading efficiency and reduces spreads compared to conventional automated market makers.

2- Technical Architecture

AiMM integrates these indicators with real-time market data from Jupiter, Soltracker, Dex Screener, and on-chain Solana data. Participants select a market-making profile, and AiMM dynamically adjusts strategies based on live conditions.

Powered by OpenAI's ChatGPT-01, AiMM continuously refines decision-making by analyzing market pressure, liquidity trends, and indicator-driven signals. Transactions are executed via Jupiter, ensuring efficient and informed market operations. The framework uses a TypeScript library for seamless access to external APIs and employs a modular approach, allowing for flexible expansion of models and trend indicators.

Strategy Configuration

AiMM's strategy configurations are fully customizable and can be deployed via the open-source GitHub repository at AiMM GitHub. The

repository provides detailed documentation, sample configurations, and instructions for integrating AI-driven market-making strategies.

```
const prompt = `
    ${ENV.MARKET_MAKING_PROMPT}

    Balances: ${solBalance.toFixed(4)} SOL, $
{tokenBalance.toFixed(4)} ${tokenSymbol}
    Buys / Sell Pressure / Volume (last 5min): $
{tokenData.txns.m5.buys} buys, ${tokenData.txns.m5.sells} sells, $
{tokenData.volume.m5.toFixed(4)} ${tokenSymbol}
    Buys / Sell Pressure / Volume (last hour): $
{tokenData.txns.h1.buys} buys, ${tokenData.txns.h1.sells} sells, $
{tokenData.volume.h1.toFixed(4)} ${tokenSymbol}
    Buys / Sell Pressure / Volume (last 6 hours): $
{tokenData.txns.h6.buys} buys, ${tokenData.txns.h6.sells} sells, $
{tokenData.volume.h6.toFixed(4)} ${tokenSymbol}
    Buys / Sell Pressure / Volume (last 24 hours): $
{tokenData.txns.h24.buys} buys, ${tokenData.txns.h24.sells} sells, $
{tokenData.volume.h24.toFixed(4)} ${tokenSymbol}

    Liquidity: ${tokenData.liquidity.usd.toFixed(4)} USD, $
{tokenData.liquidity.quote.toFixed(4)} SOL, $
{tokenData.liquidity.base.toFixed(4)} ${tokenSymbol}
    Current Price: ${min1Candles[min1Candles.length -
1].close.toFixed(4)} ${tokenSymbol}/SOL

    Indicators:
     5s: SMA: ${indicators.sec5Candles.sma.toFixed(4)}, RSI: $
{indicators.sec5Candles.rsi.toFixed(4)}
     1m: SMA: ${indicators.min1Indicators.sma.toFixed(4)}, RSI: $
{indicators.min1Indicators.rsi.toFixed(4)}
     15m: SMA: ${indicators.min15Indicators.sma.toFixed(4)}, RSI: $
{indicators.min15Indicators.rsi.toFixed(4)}
     4h: SMA: ${indicators.hour4Indicators.sma.toFixed(4)}, RSI: $
{indicators.hour4Indicators.rsi.toFixed(4)}

    Able to Buy: ${canBuy}, Able to Sell: ${canSell}.
```

```
--

    Decide an action (BUY, SELL, or HOLD) and how much to trade.
    Format reasoning as a paragraph and end with 2 new lines: "BUY
<amount>" or "SELL <amount>" or "HOLD 0".
    `;
```

3- Use Cases

AiMM is an open-source system that allows AI agents to autonomously manage liquidity and trade tokens without human intervention. Agents can select tokens to trade based on predefined parameters, execute trades based on market conditions, and optimize performance over time. This provides an accessible alternative to high-cost traditional market makers, enabling projects to automate trading efficiently.

4- Integration and Future Directions

AiMM integrates through a unified API layer for Dex Screener alerts, Jupiter quotes, and Solana ledger data. It incorporates threshold encryption for quote placement with a 90th percentile latency of 148ms. Future enhancements include federated learning for strategy sharing, dynamic market optimization, and cross-chain interoperability.

AiMM transforms market making into an autonomous, AI-driven process. By leveraging machine learning and high-frequency data analysis, 3AI Labs enables decentralized, efficient, and accessible trading solutions. This reduces dependence on traditional market makers and advances decentralized finance through intelligent automation.