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# AI-Assisted Autonomous Trading System for Volatile Cryptocurrency Tokens

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Artificial cryptocurrency tokens are highly volatile and risky to trade, particularly due to fake tokens, pump-and-dump schemes, and coordinated trading activities that can create short-lived momentum and abrupt collapses. This project presents an AI-assisted autonomous trading system designed to reduce decision noise and emotional bias by fusing three complementary signal sources into a single, auditable pipeline for Solana DEX tokens: (i) on-chain wallet activity and DEX OHLCV behavior, (ii) persona-based trader selection based on historical wallet performance, and (iii) off-chain social sentiment used as a gating mechanism. In this work, a signal is a candidate token entry alert represented as a structured record (token address/symbol, timestamp, evidence features). Signals are promoted to trades only when multiple independent validations agree, including wallet/persona credibility via a Trader Selection Framework (TSF), coordinated accumulation patterns from tracked wallets, sentiment strength and evidence count, and rule-based technical confirmation based on EMA, RSI, ATR, and volume conditions. Key contributions include an end-to-end integrated architecture covering stream ingestion, analytics, gating, execution, and audit logging; a TSF for statistically ranking wallets and assigning personas using risk-adjusted behavior; a coordination detector for near-real-time burst detection on wallet traces; and a multi-model NLP sentiment gate using X (formerly Twitter) posts combined with consistency validation (RAG) to reduce spurious triggers. A 7-day replay evaluation over 420 tokens and 1,250 candidate signals produced 312 paper trades under fixed stop-loss and tiered take-profit rules, achieving a 54.2% win rate, +0.42% mean return per trade, -7.8% maximum drawdown, and 18.6 min average holding time, while maintaining near-real-time latency (coordination event median≈320 ms; P95 $<$ 1 s). This demonstrates that multi-source validation and explicit risk constraints can operationalize safer, more systematic automation for high-risk token markets.

*Keywords:* Artificial intelligence, Autonomous trading, Blockchain, Cryptocurrency, Natural language processing