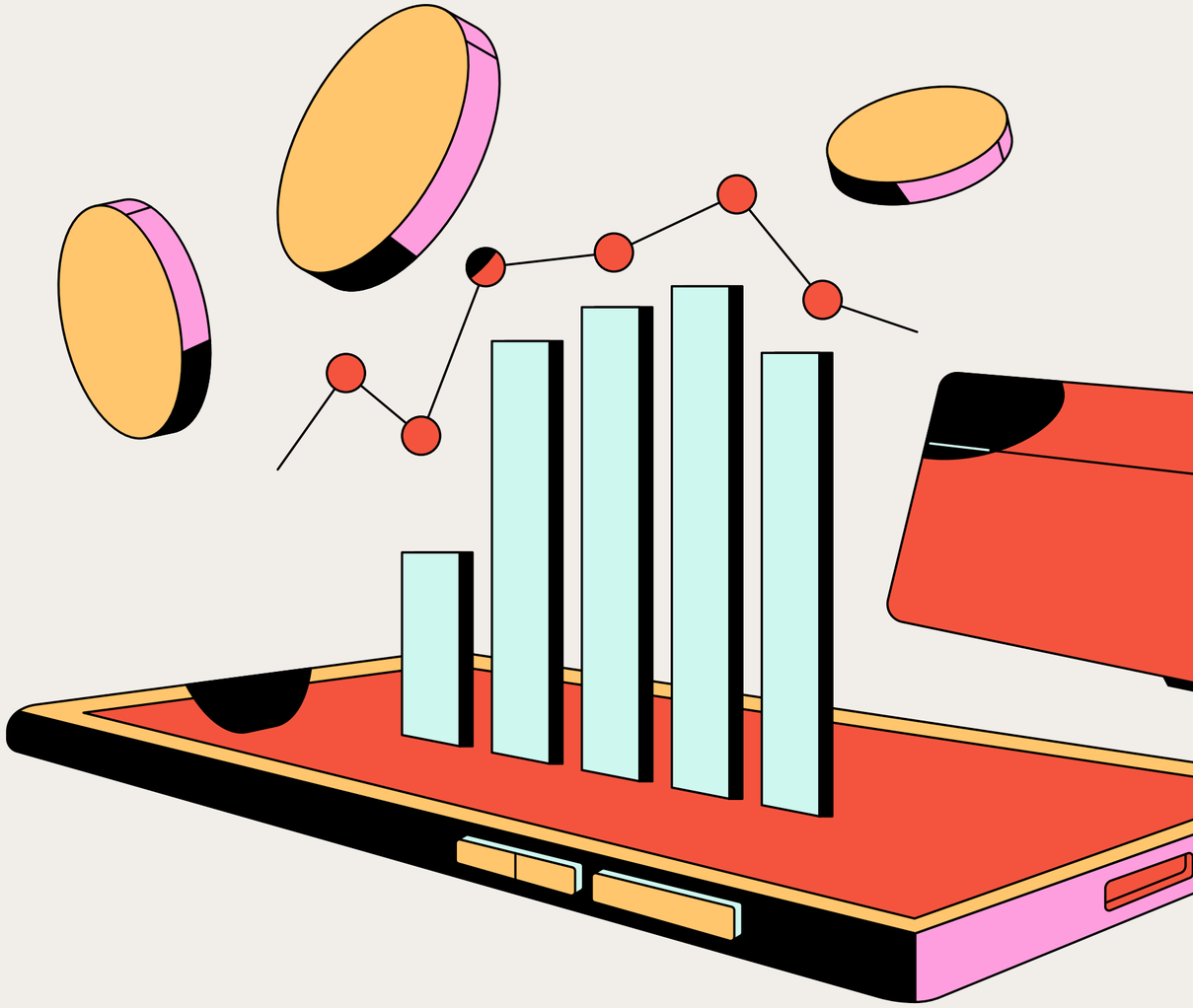
AUTONOMOUSHACKS26

TEAM LAKADBAGGHE PRESENTS

Trade Guard AI

Autonomous Risk Governor for Real -Time Trade Execution



Problem Statement

Retail trading platforms have increased market access and information availability, but trader performance has not improved accordingly. Research shows that most retail traders fail not due to lack of knowledge, but due to behavioral and psychological biases. Emotions such as fear, greed, and loss aversion often dominate decision-making during live trading, causing traders to ignore risk discipline and make impulsive decisions that lead to rapid capital loss.

Key Issues Observed

- Traders frequently overtrade during emotional states
- Losses trigger revenge trading and impulsive position sizing
- Personal risk limits are ignored under stress
- Existing tools rely on trader self-control
- Risk analysis is mostly post-loss rather than preventive

There is no autonomous, real-time system that actively monitors trader behavior and risk exposure and intervenes at the moment of trade execution to prevent emotionally driven, high-risk actions.

Most trading platforms provide indicators, alerts, and reports. These tools expect traders to stay calm and disciplined during losses. In reality, emotions often take control, and traders ignore warnings at critical moments.

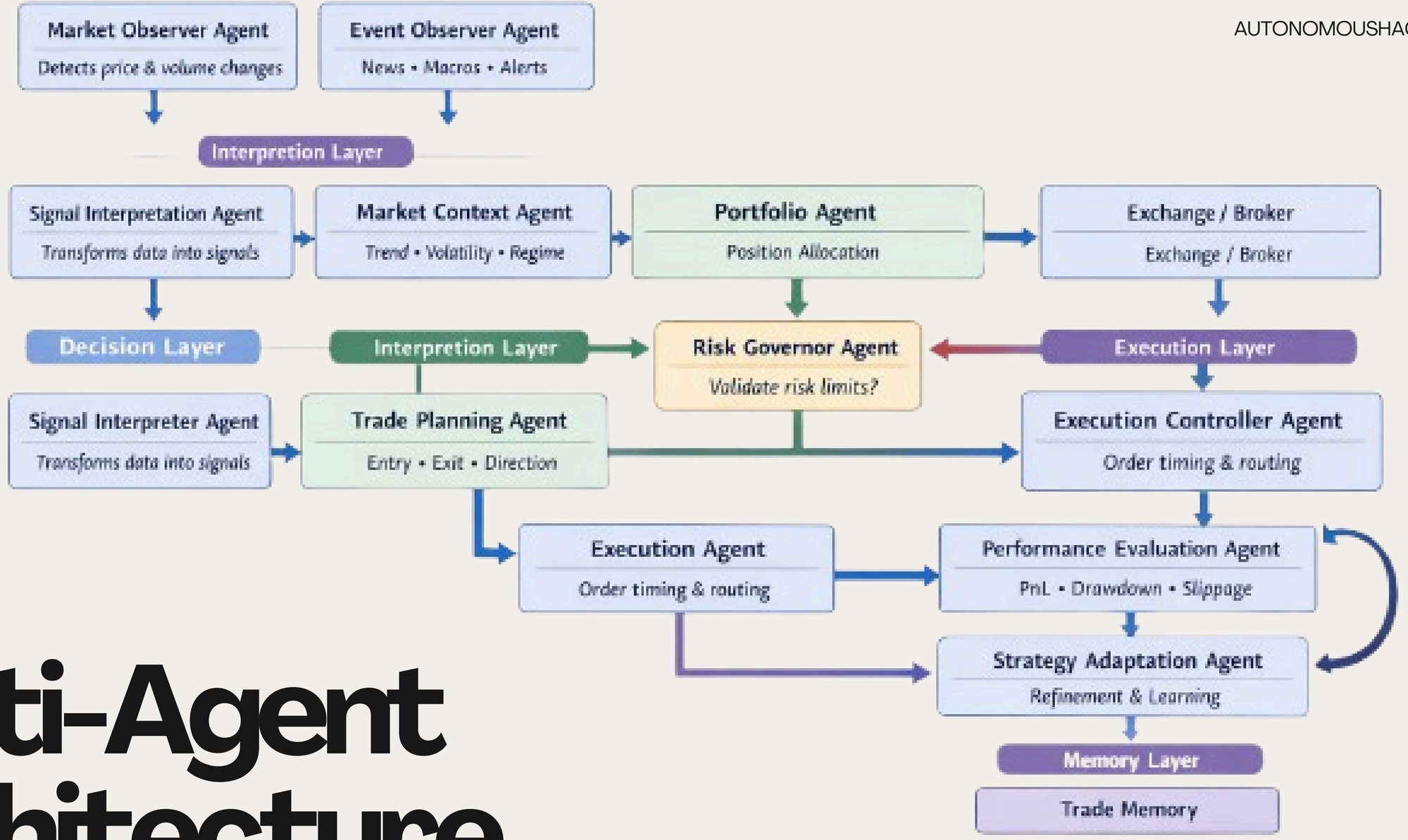
Indicators need manual interpretation –
Alerts are ignored under emotional pressure –
Risk rules are fixed and not personalized –
Loss analysis happens after damage is done –
No system stops a risky trade in real time –

Limitations of Existing Solutions

Proposed Solution

To reduce trader losses, risk control must happen before a trade is executed, not after losses occur. This requires an autonomous system that works continuously and does not rely on trader self-control during emotional moments.

- TradeGuard AI acts as an autonomous risk governor
- Continuously monitors:
  - Trader behavior
  - Account risk exposure
  - Market conditions
- Intervenes in real time to prevent high-risk trades
- Does not provide market predictions or trading advice



Multi-Agent Architecture

All steps happen in real time.

1. Trader attempts a trade
2. Behavior agent checks emotional patterns
3. Risk agent evaluates account limits
4. Market agent checks volatility and instability
5. Personalization agent adjusts thresholds
6. Coordination agent makes final decision
7. Intervention agent allows or restricts trade

System Workflow

Tools and Technologies

Category	**Tools / Technologies**	**Purpose**
Programming Language	Python	Core logic, agent implementation
Data Processing	NumPy, Pandas	Behavioral and risk data handling
Machine Learning	scikit-learn	Pattern detection and personalization
Rule Engine	Custom Rule-Based Logic	Risk constraint enforcement
Real-Time Processing	Event-Driven Architecture	Real-time trade evaluation
APIs	Broker / Trading Platform APIs	Trade data and execution control
Backend Framework	FastAPI / Flask	System integration and services
Data Storage	PostgreSQL / SQLite	Trader profiles and logs
Monitoring and Logging	Prometheus, Log Files	System health and auditability
Visualization	Streamlit / Dashboard Tools	Risk and behavior insights

Key Characteristics

- Real-time decision-making at trade execution
- Modular multi-agent architecture
- Personalized and adaptive risk thresholds
- Interpretable rule-based interventions
- No financial advice or price prediction

Evaluation Focus

- Reduction in high-risk trade attempts
- Improved adherence to risk limits
- Behavioral improvement over time
- System stability and response latency

System Characteristics

Future Scope

Live Platform Integration

- Integration with real broker APIs for real-time deployment and testing.

Advanced Behavioral Modeling

- Use of more sophisticated behavioral and learning-based models for improved personalization.

Trader Awareness Dashboard

- Visual dashboards to help traders understand and improve their behavior over time.

Conclusion

TradeGuard AI addresses a critical gap in retail trading platforms by introducing an autonomous, real-time risk control system. Instead of predicting markets or giving trading advice, it focuses on enforcing risk discipline and preventing emotionally driven, high-risk trades at the moment of execution. This approach improves trader outcomes while remaining ethical and regulation-aware.

THANKYOU!!!

Team Members:
Jayal Shah - 9265911496
Sakshi Giglani - 7069052453
Sakshi M - 7862807683