Autonomous Comic Book Character Market Intelligence System (ACBCMIS)

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Objective:

Create a multi-agent AI system to dynamically track, analyze, and predict comic book character market valuations using data science, machine learning, and adaptive systems methodologies.

Core System Architecture:

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1. Distributed Multi-Agent Framework
2. Real-Time Data Collection Ecosystem
3. Predictive Modeling using Machine Learning
4. Market Simulation with Complex Interdependencies

Key Agents:

A. Data Harvester Agent:

- Aggregates data from 50+ sources including APIs, web scraping, and publisher databases.

B. Sentiment Analysis Agent:

- Uses NLP for emotional tone tracking, social media analysis, and cultural interpretation.

C. Correlation and Prediction Agent:

- Applies ensemble machine learning models for forecasting trends and character interrelations.

D. Market Dynamics Simulator:

- Models inter-character market behaviors and unexpected event impacts.

Technical Stack:

- Language: Python 3.9+
- Frameworks: LangChain, CrewAI, FastAPI
- ML Libraries: TensorFlow, PyTorch
- Data Processing: Apache Spark
- Database: MongoDB/Cassandra
- Deployment: Docker, Kubernetes

Valuation Metrics:

- Historical Significance Score
- Cultural Impact Metric
- Narrative Complexity Index
- Media Adaptation Influence
- Creator Reputation Factor

Success Criteria:

- 85%+ predictive accuracy
- Real-time processing
- Ethical data handling and transparency

Initial Prototype Focus:

- Core agent communication
- Basic data collection pipeline
- Sentiment analysis
- Market simulation

Implementation Notes:

- Emphasize modularity and agent extensibility
- Clear inter-agent communication
- Scalable, ethical, and adaptive design

Script Optimization:

- Async data collection with FastAPI endpoints
- Modular agent classes for valuation and extraction
- Placeholder logic for parallel development and rapid iteration

Outcome:

A deployable script using asyncio, LangChain, and CrewAI to simulate a working prototype. Ready for rapid expansion with ML and cloud integration.