**Synopsis of Advanced Financial Misinformation Detection System**

This proposed system aims to detect and mitigate financial misinformation in real time using cutting-edge technologies like Artificial Intelligence (AI), Large Language Models (LLMs), and reliable data providers. Its modular architecture consists of four main components:

1. **Data Acquisition Module**: Collects financial data in real time from APIs like Yahoo Finance and LLMs, ensuring efficient handling of unstructured data.
2. **Data Processing and Analysis Module**: Utilizes NLP and multi-threaded architecture to structure and analyze financial information for context and relevance.
3. **Accuracy Assessment Module**: Cross-references processed data with trusted sources using a custom verification metric, flagging discrepancies for further review.
4. **Output Generation Module**: Displays validated information through an intuitive Streamlit interface, ensuring user-friendly interaction.

**Technological Framework**

The system uses Python-based frameworks, OpenAI API, and Streamlit for seamless integration and interaction. It is designed for scalability with cloud deployment on platforms like AWS or Google Cloud, ensuring real-time performance and data privacy.

**Key Objectives**

* Real-time financial misinformation detection using advanced LLMs and verification metrics.
* Improved accuracy through cross-referenced validation with trusted financial sources.
* Scalable multi-query processing with modular design and resource optimization.
* User-centric interface for financial analysts and non-technical users.
* Data privacy, security, and alignment with Sustainable Development Goals (SDGs).

**System Workflow**

1. Acquire financial news and stock data using APIs and LLMs.
2. Preprocess data to remove noise and normalize for analysis.
3. Validate accuracy against trusted sources using custom metrics.
4. Generate outputs with dynamic feedback via an interactive interface.

**Advantages**

* High accuracy with real-time processing.
* Scalability for increasing data and user demands.
* Enhanced user experience through intuitive design.
* Strong focus on data privacy and trustworthiness.

**Implementation**

The system integrates LLMs for language understanding and uses tools like LSTM, XGBoost, and yfinance for data analysis. It has been tested for accuracy, latency, and scalability, with cloud deployment ensuring high availability.