Finance-LLMs: RAG Multi-Agent Framework for Financial Analysis

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Abstract

In this work, we introduce **FIND-MA**: a *Retrieval-Augmented Multi-Agent Framework for Fundamental Company Analysis and Financial Insight*. FIND-MA coordinates a network of specialized agents each focused on a key analytical dimension such as financials, market positioning, management, sentiment, and risk working together through shared memory and inter-agent coordination to produce structured and interpretable insights. The framework uses **DeepSeek-R1** (7B), which outperforms other LLMs in contextual grounding and multi-hop reasoning, enabling each agent to generate role-specific outputs and refine them iteratively. To support development and evaluation, we manually analyzed 30 companies across various sectors to construct a high-quality dataset capturing sectoral patterns and financial signals. FIND-MA delivers decision-ready outputs such as SWOT analysis, financial health scores, and strategic red flags, offering a scalable, transparent, and intelligent assistant for company evaluation and financial decision-making.

Related Work

Perplexity AI: A retrieval-augmented chatbot that excels at breadth but lacks deep contextual reasoning and interpretability in financial domains.

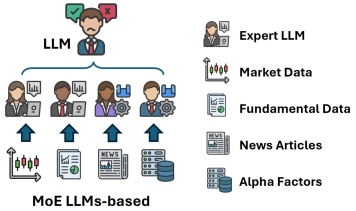
Manus AI: Focuses on enterprise-grade financial analysis through rule-based pipelines, but lacks modularity and agent-level explainability.

AutoGPT/AgentGPT: Demonstrate autonomous multi-agent collaboration, though largely task-agnostic and ill-suited for domain-specific financial tasks.

FinBERT: A transformer-based model fine-tuned on financial texts, useful for sentiment analysis but limited to single-task classification without deeper reasoning.

RAG + Agentic Network

To enable grounded and context-rich reasoning, our framework integrates a **Retrieval-Augmented Generation (RAG)** pipeline with a multi-agent network. We use a curated corpus consisting of our manually annotated reports, along with five years of company annual reports and earnings call (concall) transcripts as the retrieval base. This ensures that agents operate on domain-specific, company-relevant information rather than relying on general internet content.



Three specialized agents leverage this RAG pipeline:

1. The **Stock Price Correlator Agent** analyzes historical price movements in conjunction with financial and strategic events extracted from the retrieved reports.

2. The **News Agent** monitors recent developments and links them to internal company metrics to highlight material external triggers.

3. The **Sentiment Analysis Agent** evaluates tone and polarity in news and concall transcripts to assess market and managerial sentiment.

Dataset

To support agentic reasoning and domain-specific grounding, we constructed a custom dataset through manual analysis of **30+ companies** and **7 key industry sectors**. This dataset comprises two layers:

1. **Company-Level Reports:** We curated detailed analytical summaries, risk factors, financial patterns, and management signals for individual companies such as *KPIT, Affle, Nvidia, Tesla, Lockheed Martin, Infosys, TCS, Sun Pharma, Cipla, Pfizer, Eli Lilly*, and more. These reports span across diverse domains including pharmaceuticals, technology, semiconductors, defense, telecommunications, and automotive.

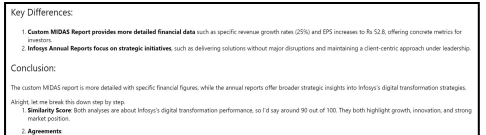
2. **Sector-Level Insights:** We also created synthesized reports for broader sectors including NASDAQ, GPU and Semiconductors, Product & Service Technology, Automobile, Banking and NBFCs, Telecommunications, and Healthcare & Pharmaceuticals. These reports include cross-company trend analysis, common growth drivers, regulatory concerns, and macroeconomic dependencies.

Each entry in the dataset includes structured annotations useful for retrieval, enabling rich interactions with our **RAG + Agentic Network** pipeline. This dataset forms the backbone for evaluating FIND-MA's reasoning quality and agent interpretability.

Dataset of all the financial analysis reports

Analysis and Future Work

While FIND-MA shows strong potential in generating structured and interpretable company analyses, several directions remain for enhancement. We plan to expand the agent network by adding domain-specific roles such as an ESG Agent, Policy & Regulation Agent, and Macroeconomic Agent to enrich coverage. In parallel, we will explore alternative LLMs like Qwen3 to compare performance, reasoning depth, and efficiency. To validate effectiveness. Finally, we are developing an interactive web interface to make the system accessible to non-technical users—enabling broader adoption of FIND-MA as a general-purpose, trustworthy assistant for financial analysis.


Key Differences:

1. **Custom MIDAS Report provides more detailed financial data** such as specific revenue growth rates (25%) and EPS increases to Rs 52.8, offering concrete metrics for investors.
2. **Infosys Annual Reports focus on strategic initiatives**, such as delivering solutions without major disruptions and maintaining a client-centric approach under leadership.

Conclusion:

The custom MIDAS report is more detailed with specific financial figures, while the annual reports offer broader strategic insights into Infosys's digital transformation strategies.

Alright, let me break this down step by step.

1. **Similarity Score**: Both analyses are about Infosys's digital transformation performance, so I'd say around 90 out of 100. They both highlight growth, innovation, and strong market position.
2. **Agreements**:
   - Both mention growth in areas like cloud solutions, AI/ML projects, and large-scale deals.
   - Both stress the importance of digital infrastructure for remote work.
   - Both use terms like "leading the market," indicating a similar focus on success.
3. **Differences**:
   - The custom report gives specific stats like revenue growth rates (25%) and EPS increases to Rs 52, which are more concrete numbers.
   - The annual reports talk about strategies like reinvention without major disruptions and client-centric solutions, offering more actionable insights.
4. **More Detailed Info**: The custom MIDAS report provides precise financial metrics and specifics on deals, making it more detailed for investors looking at exact figures.

So the final answer is a 90/100 similarity score with clear agreements and differences noted.

Similarity Score: 90

Conclusion

FIND-MA introduces a retrieval-augmented, multi-agent framework for transparent and structured company analysis. By combining specialized agent roles, deep LLM reasoning with DeepSeek-R1, and a curated financial dataset, our system delivers interpretable, decision-ready insights. With plans to expand agent diversity, improve model performance, and build user-friendly interfaces, it moves toward becoming a scalable and trustworthy AI assistant for real-world financial evaluation.