

AI Financial Media Channel

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Co-op Program with ALGOGENE



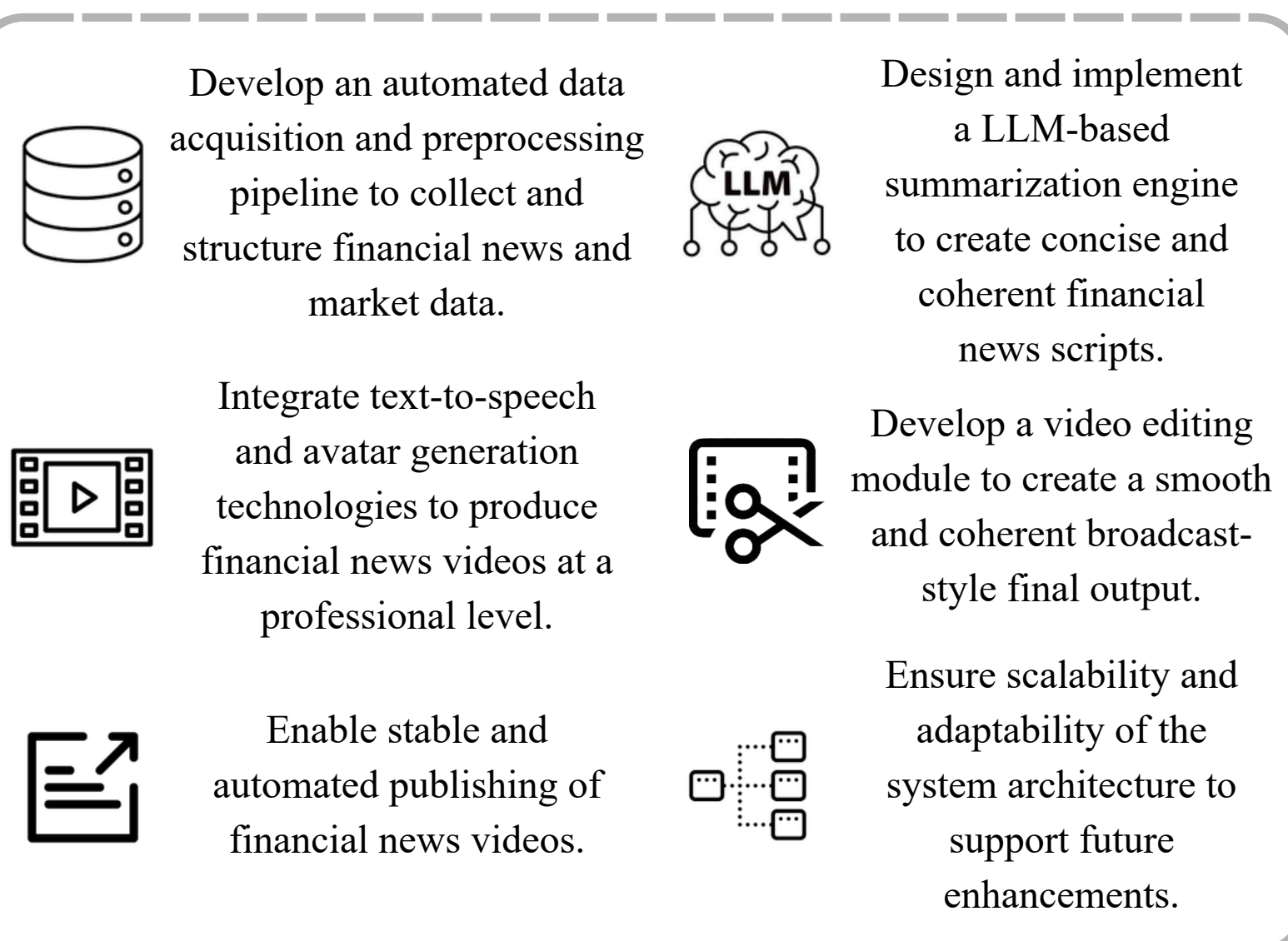
Overview



With the growing demand for timely and accessible financial information, traditional financial news production remains heavily reliant on manual writing, video editing and human presentation, making it time-consuming, costly and difficult to scale for daily reporting.

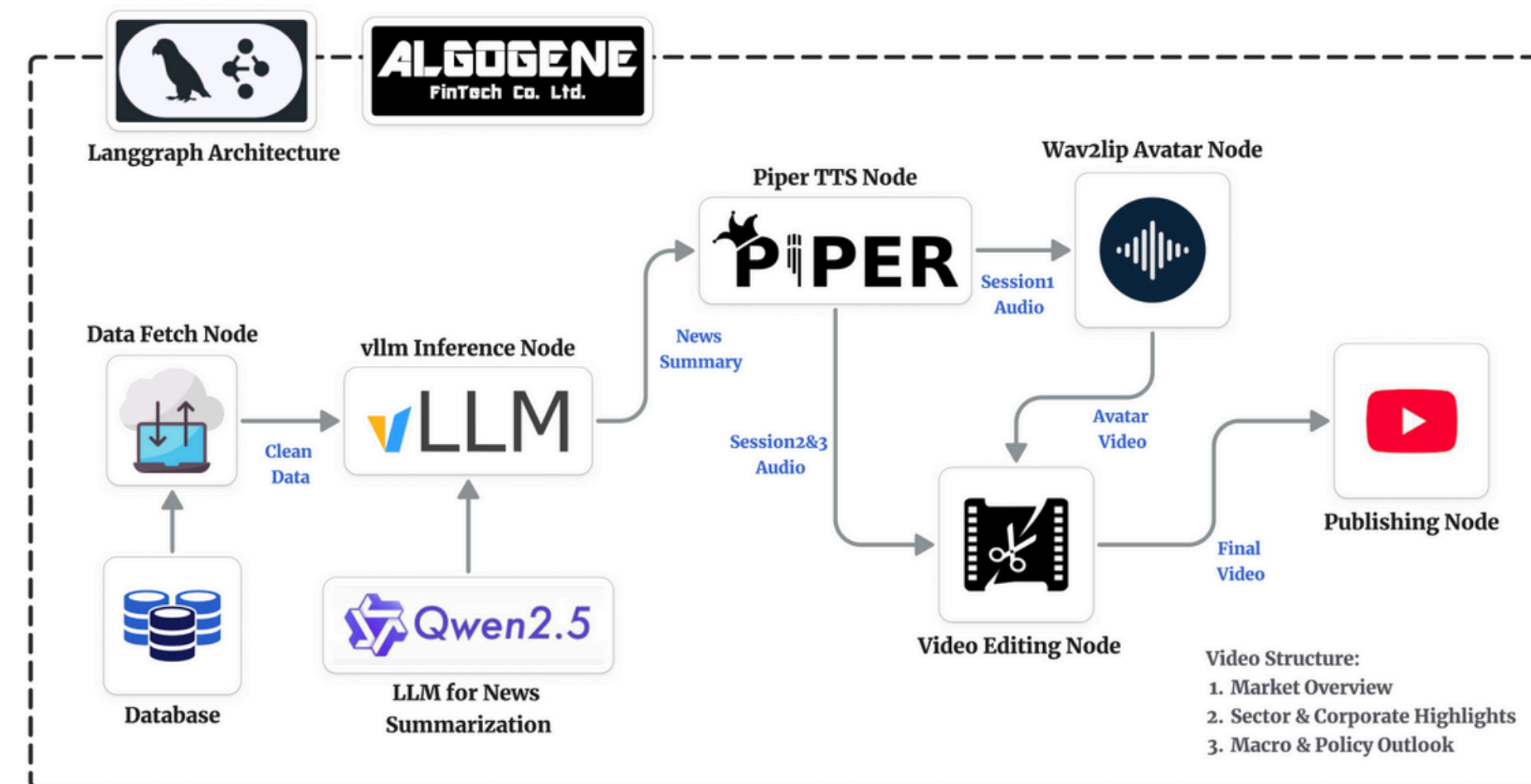
This project explores the feasibility of a fully **automated financial news reporting system** that transforms raw financial news articles into broadcast-style video content using modern AI technologies, demonstrating a scalable approach to AI-driven financial media production under realistic deployment constraints.

Objectives



Methodology

System Design



Pipeline Components

- LangGraph Orchestration:** Coordinates execution flow, state management and error handling across all node-based modules, ensuring system stability and scalability.
- Data Fetch Node:** Retrieves financial news articles via ALGOGENE's data APIs and organizes them into structured inputs for downstream processing, serving as the data foundation for summarization and video generation.
- LLM-Based Summarization Node:** Generates structured daily financial summaries using a LoRA-fine-tuned Qwen2.5-7B model. A two-stage workflow is adopted, with relevance-based title filtering applied prior to full-text summarization.
- Text-to-Speech Node:** Converts the generated summaries into natural and intelligible speech using the Piper text-to-speech engine. The design prioritizes robustness and pronunciation consistency.
- Avatar Video Generation Node:** Applies audio-driven lip synchronization via Wav2Lip on pre-generated avatar templates to produce realistic virtual presenter videos. This design preserves natural head and upper-body motion, enhancing the overall visual realism.
- Automated Video Editing Node:** Automatically composes avatar videos with background visuals, scrolling price tickers, subtitles and background music. This node produces a cohesive broadcast-style video that aligns visual elements with the narrative structure.
- Publishing Node:** Handles final output delivery by exporting rendered videos to the YouTube channel, while managing metadata generation, file naming and scheduling.

Final Delivery

Video Layout Design



- Layout 1** features a talking avatar as the primary visual element, emphasizing direct narration to deliver a clear and engaging market overview.
- Layout 2** adopts financial news-related background videos as the main visual focus, complemented by scrolling price tickers and dynamic visual effects.

Conclusion

This project demonstrates the practical feasibility of a fully automated AI-driven financial news reporting system. By integrating all core components into a unified pipeline, the system produces professional broadcast-style financial news videos with minimal human intervention.

While limitations remain in avatar realism and semantic visual generation, the proposed system provides a strong foundation for scalable and cost-efficient financial media automation.