

Digital Human and AI Virtual Assistant

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Overview

Traditional customer service approaches face significant challenges including limited availability, inconsistent service quality, and high staffing costs.

The Digital Human Assistant addresses these challenges by providing an AI-powered, always-available solution that combines natural language processing with advanced information retrieval systems.

This enables businesses to deliver personalized, consistent, and scalable customer service experiences that can be deployed across multiple channels while significantly reducing operational costs.

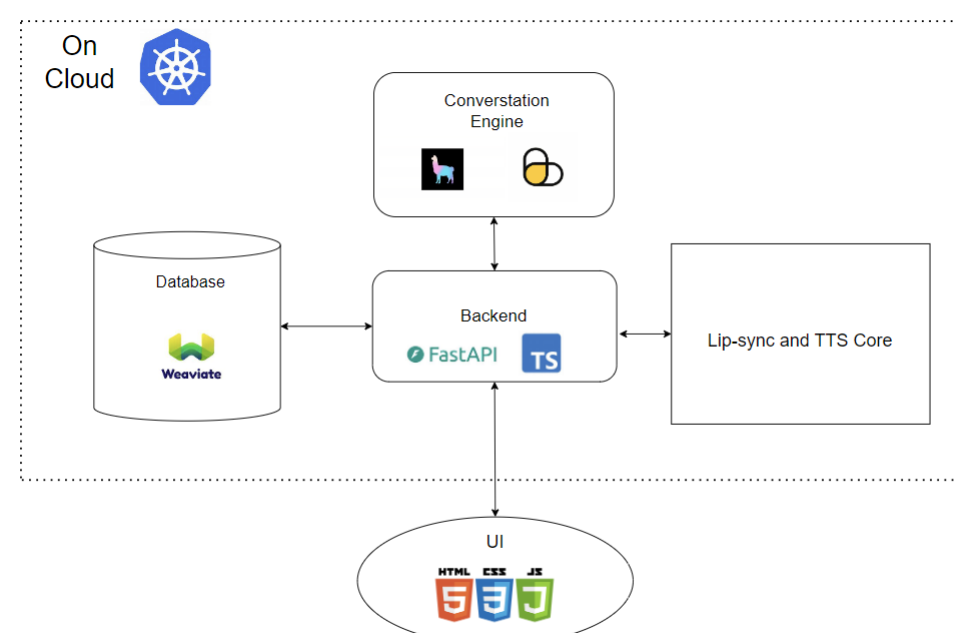
Objectives

- Develop an end-to-end Digital Human Assistant system for businesses to enhance their customer service operations using AI technology.
 - Adapt online information to further expand the knowledge base
 - Retrieve information based on the query
 - To accurately understand and extract relevant information from user questions.
 - To provide accurate and contextually relevant responses.

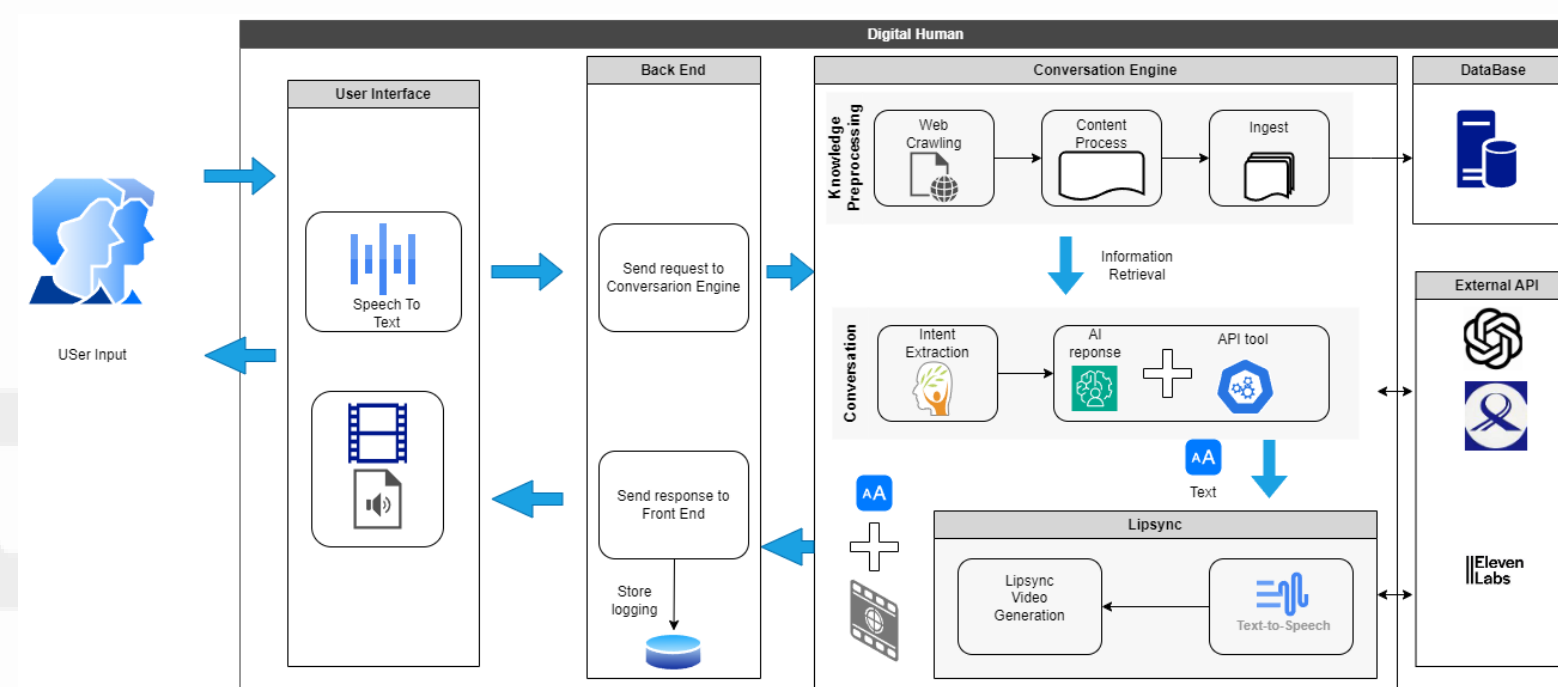
Design and implement a conversational interface for customers to interact naturally with the system, enabling them to get instant support, information, and resolve queries

System Overview

- Conversation Engine
 - Web Crawler
 - Information Indexer
 - Information Retriever
 - Workflow
- Lip-sync and TTS Core
- User Interface
- Database



Design



When user input query, **Front end** and **Back end** will send conversation request to **Conversation Engine**. Conversation process user query based on **Workflow** which includes intent extraction and give deterministic response based on related information from database and web pages. The response from **Conversation Engine** will pass to **Lip-sync Engine** to generate audio and video. Those information will be passed to **Front End** to display and **Back End** to record.

Features


Harness the Power of Connected Intelligence


Stay on Track with Guided Precision

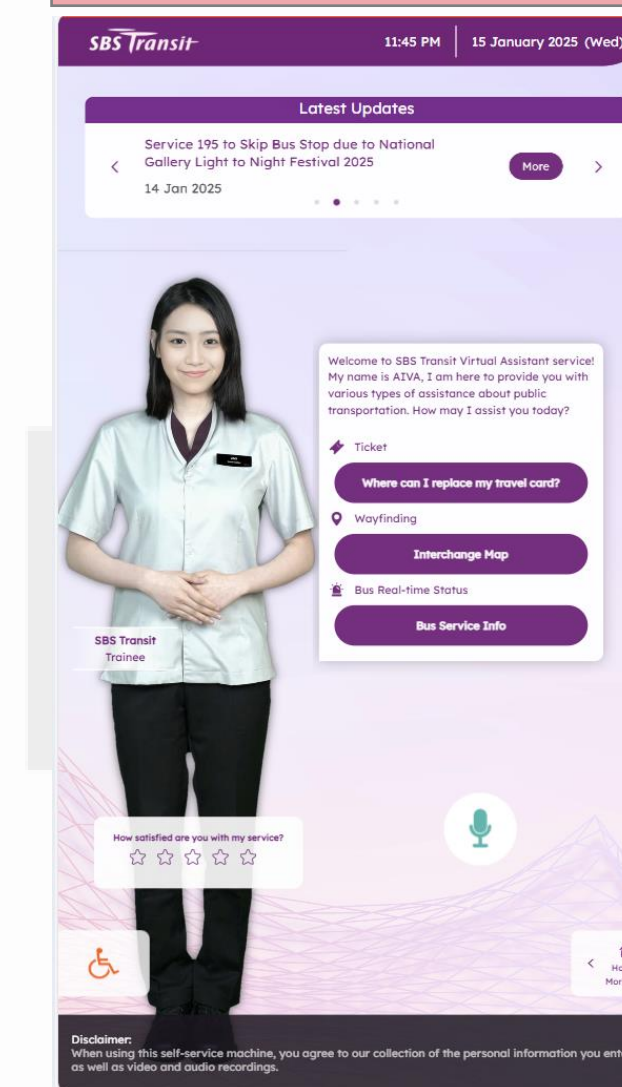

Limitless Possibilities

Our system taps into the vast internet landscape, bringing you real-time information and insights from across the digital world.

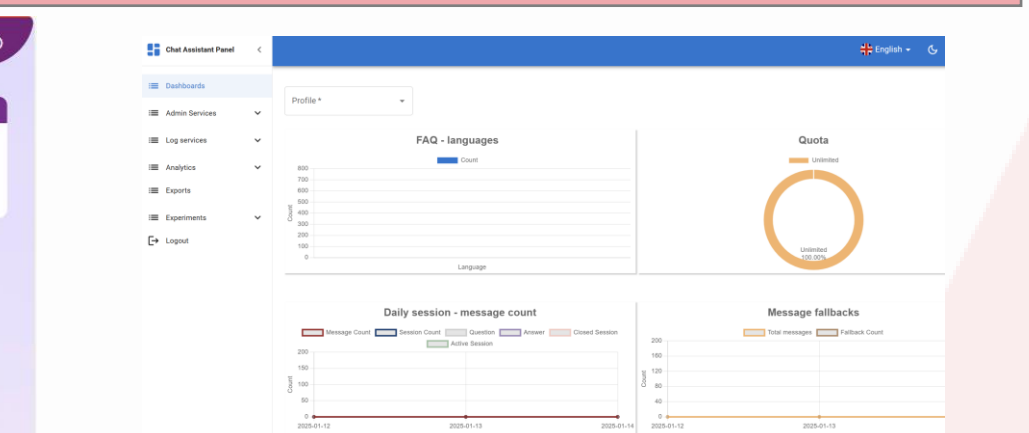
Experience structured interactions where every response follows carefully designed workflows, ensuring consistent, reliable, and purposeful communication.

Through Integration: Connect seamlessly with countless external services and APIs, expanding capabilities beyond conversation to handle real-world tasks and actions.

User Interface



Product User Interface



Admin Panel

Powered by

- Data Engine: LlamaIndex + Weaviate for vector operations
- Infrastructure: AWS EKS + Container Management
- Frontend: React.js with JavaScript (Client-side rendering)
- Backend: Golang REST API + Python FastAPI microservices

Conclusion

Given the rapid advancement in AI-driven text generation technologies, this project demonstrates the successful implementation of a modern, high-performance system that significantly reduces operational complexity while enhancing productivity. By leveraging LlamaIndex with cloud-native architecture, we've transformed manual text generation processes into an automated, scalable solution.

This implementation proves that a well-architected system, combining React-based frontend interfaces with Go and FastAPI microservices, can seamlessly integrate with existing infrastructure while maintaining optimal performance and reliability. The successful deployment and adoption of this system not only meets current business requirements but also establishes a foundation for future enhancements and scalability.