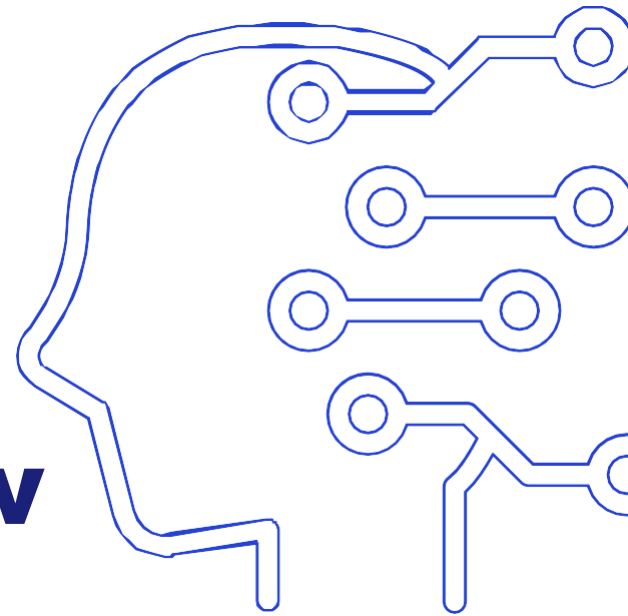**AKENO TECH**

Project Showcase: Livekit Voice Agent – Dynamic Conversational AI

# Alive5 Voice Agent – LiveKit Integration

Project Overview

- The Alive5 Voice Agent is a sophisticated conversational AI system built on the LiveKit framework that provides real-time voice interactions with dynamic bot flow management.

- This production-ready system combines advanced speech-to-text (STT) and text-to-speech (TTS) technologies with intelligent conversation orchestration to deliver seamless voice experiences. The agent dynamically loads conversation flows from the Alive5 API, enabling context-aware responses and FAQ handling while maintaining natural conversation patterns.

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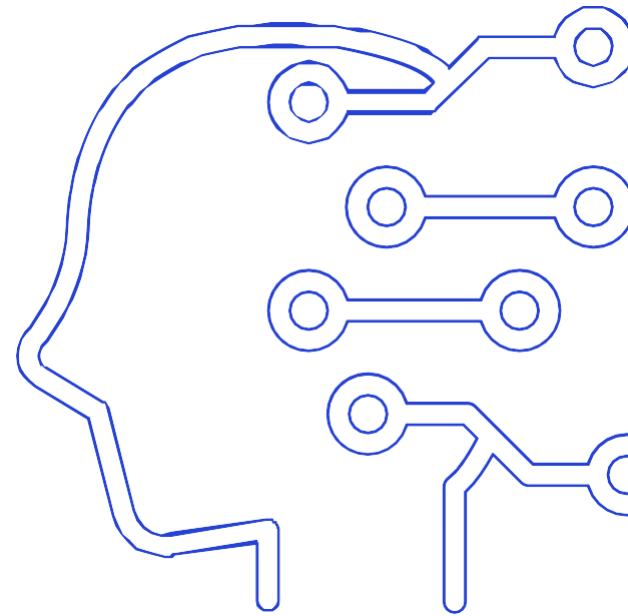
Key Features

- Real-time voice conversations with sub-second response times
- Dynamic bot flow loading and conversation orchestration
- FAQ bot integration with voice-optimized responses
- Multi-voice support with 291+ available voice options
- Production-ready deployment with automated service management
- Comprehensive health monitoring and logging systems
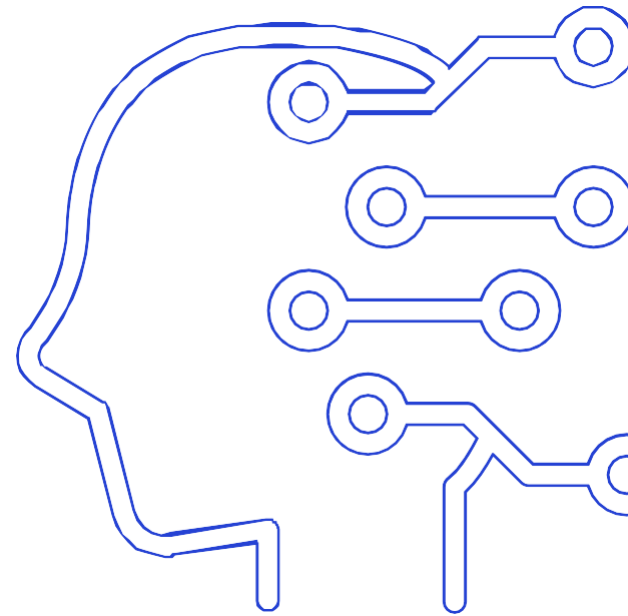- Secure environment variable management with .env file deployment
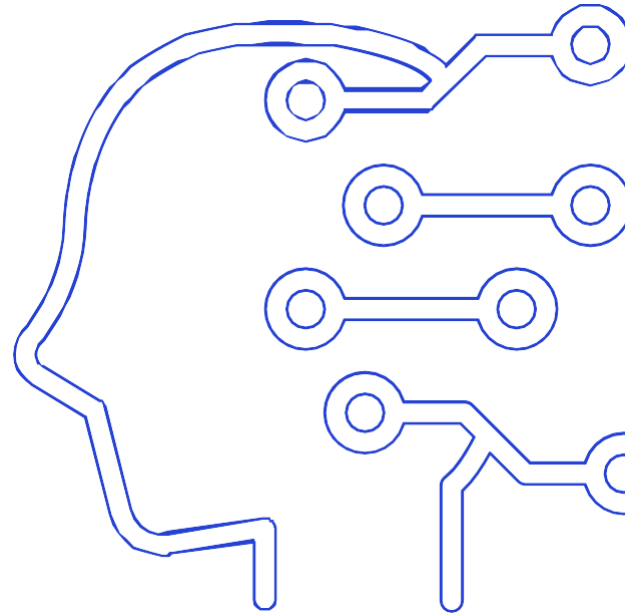
Project Summary

- Engineered a Livekit Voice Agent, a dynamic, real-time conversational AI system designed for complex, flow-based customer support.

- This is a robust, multi-voice solution that establishes a new standard for intelligent and flexible support infrastructure.

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Technical Architecture

- The system includes a FastAPI backend for APIs and configurations, a LiveKit worker for real-time voice and logic, and a frontend for user interaction. It integrates Deepgram (STT), Cartesia (TTS), OpenAI (LLM), and Silero VAD..
- The architecture enables dynamic bot flows, FAQ integration, and live conversation management. It's fully containerized with systemd services, detailed logging, and a PowerShell deployment pipeline for automated setup and service control.
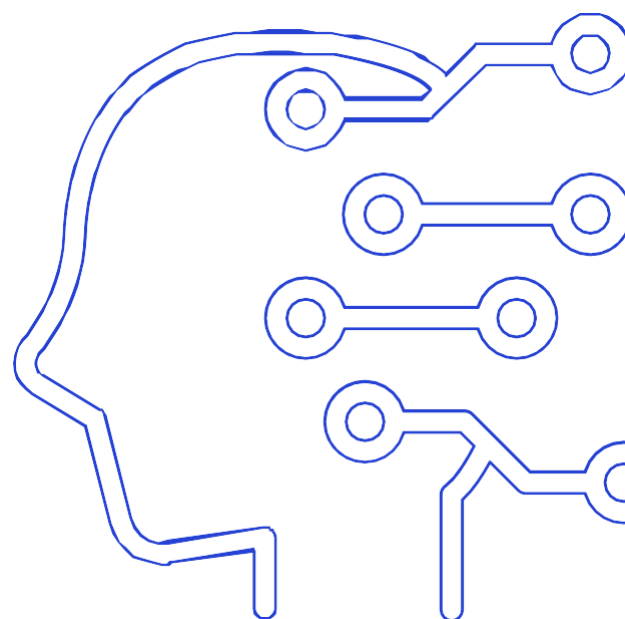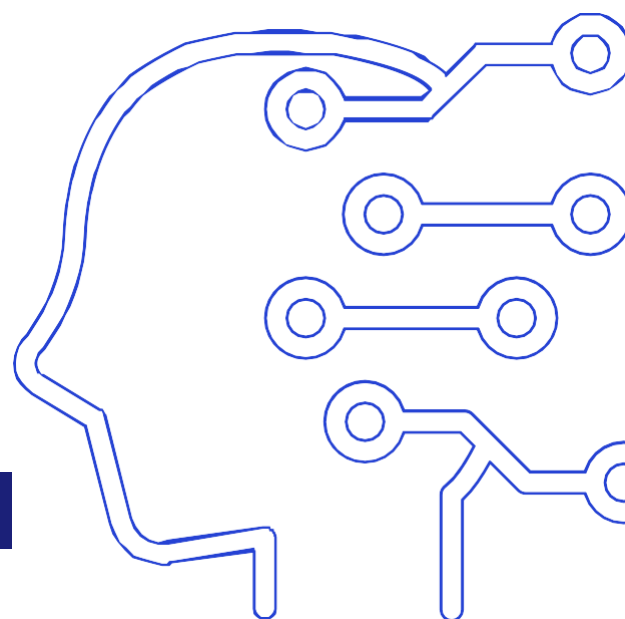
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Code & Demo

- **Github:**
  https://github.com/gspec
  -1/voice-agent-livekit
- **website link**:
  https://voice-agent-
  livekit.vercel.app/

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# Key Technical Achievements

• Dynamic Flow Architecture: JSON-driven conversational logic from external site (Alive5).

• Intelligent Intent Routing: Dynamic AI-powered intent detection and execution.

• Resilient Fallback Mechanism: Queries Alive5 FAQ bot (Bedrock API).

• High-Fidelity Communication: Livekit (RTC), Deepgram (STT), Cartesia (TTS).

• Structured Interface: Secure, modular bot flow setup.

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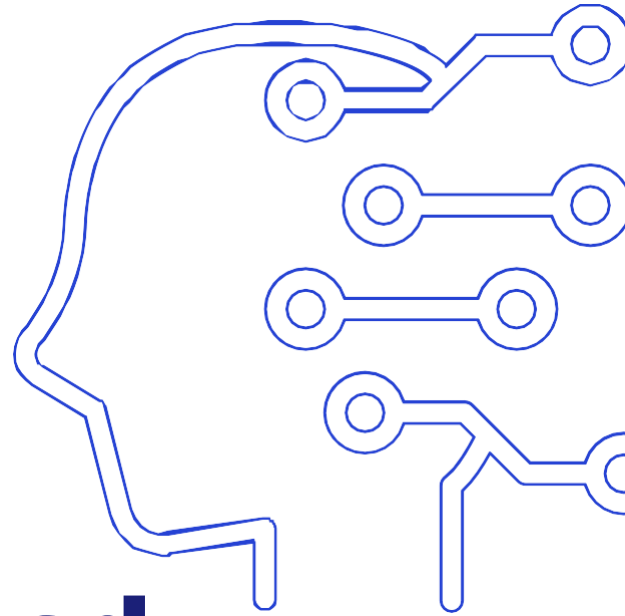
Skills Demonstrated

• Real-time Communication (RTC) development with Livekit.

• Integration of AI services: OpenAI, Deepgram, Cartesia, AWS Bedrock.

• Dynamic, configuration-driven application architectures.

• API development and complex data flow management.

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Conclusion

This project demonstrates expertise in delivering smart, engineered solutions for scalable, high-performance conversational AI.

customer-service
Connected   Online
Intent: Detecting...

- **Session ID:** session_1759253919815_q9tm46
- **Status:** Ready to connect to Alive5 Support
- **Features:** Dynamic Intent Detection, Real-time Analytics

Connected to customer-service! I'm ready to help you.

Welcome to Alive5 Restaurant! Where every flavor tells a story. How can I help you?
2:20:32 PM

Jacqueline - Reassuring Agent   Ready to listen

Live Transcript   Listening...

Can I get the menu?