VannGuard AI

AI-POWERED AUTOMATED LOG ANALYSIS AND ERROR RESOLUTION SUMMARIZATION

Overview

Aviatrix is a cloud networking platform that simplifies and secures multi-cloud environments, providing businesses with advanced networking, security, and visibility tools. Their platform supports major cloud providers such as AWS, Azure, and GCP. Among Aviatrix's prominent customers are industry giants like Coca-Cola, MGM Resorts, Netflix, eBay, and Siemens. To support seamless operations across diverse customer environments, Aviatrix relies on a large support team responsible for troubleshooting networking and system log files when customers face issues.

Customer

Aviatrix, USA

Country: USA

Industry: B2B & B2C

Customer Size: 1000+

Publish Date: 12/07/2024

Problem Statement

Aviatrix's support engineers faced challenges managing and analyzing vast amounts of system log files during customer incidents. When a customer environment went down, engineers would manually sift through logs to identify errors, communicate with the client, and document resolutions—a time-consuming process prone to delays. The need for a more efficient, automated solution to analyze logs and generate error resolution summaries became critical to maintaining customer satisfaction and operational efficiency.

Technical Solution

Our team developed an AI-driven pipeline that automates log analysis and error resolution summarization, utilizing state-of-the-art Large Language Models (LLMs) and Retrieval-Augmented Generation (RAG) techniques. The solution integrates AWS OpenSearch, which ingests historical support data from Zendesk tickets containing error types and corresponding resolution steps. This knowledge base serves as the backbone for the AI to analyze new log files and generate resolution summaries. The implementation also included vLLM and frameworks like FastAPI and Docker to streamline the processing pipeline.

Utilising LangChain and LLM-based models like Llama 3.1 and Mistral 7B, the pipeline identifies critical issues in the log files and autonomously crafts resolution summaries that assist engineers. The entire solution was deployed within the Aviatrix IT team's infrastructure using AWS ECS, ensuring scalability and security in line with Aviatrix's high standards.

Results

The AI-powered pipeline significantly reduced manual intervention in log analysis and error documentation, drastically improving response times for Aviatrix's support engineers. It enabled quicker identification of critical issues and provided immediate, actionable summaries, allowing engineers to focus on higher-level problem-solving. The automation of these processes resulted in improved operational efficiency, faster resolution times, and enhanced system reliability. As a result, customer satisfaction increased, with Aviatrix delivering a more seamless, consistent support experience across their enterprise clients.

Technologies

- Python
- Pandas
- LangChain
- Llama3.1
- FastAPI
- ECS
- AWS OpenSearch
- vLLM
- Mistral 7b

Domains

- Generative AI
- Natural Language Processing (NLP)
- Retrieval Augmented Generation (RAG)