New Math DATA

CASE STUDY

# Implementing an Intelligent Document Processing System for Nuvola Talent

## Executive Summary

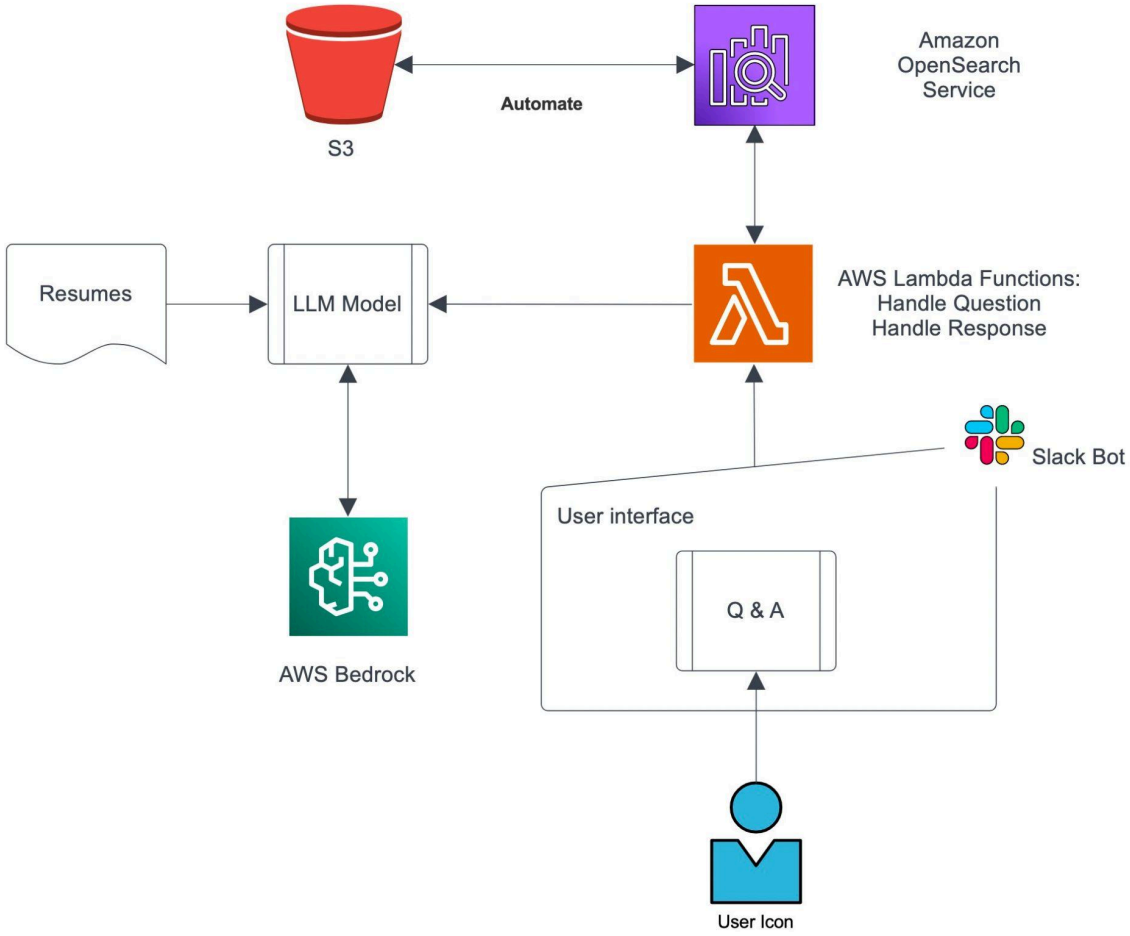
*Nuvola Talent, a progressive talent acquisition firm, partnered with New Math Data to enhance its recruitment process through an Intelligent Document Processing System. The solution, leveraging AWS technologies like Amazon Bedrock, AWS Lambda, and AWS OpenSearch, automated resume processing and improved candidate-job matching accuracy. This Generative AI-powered system significantly reduced evaluation time, ensured scalability, and enhanced user experience for recruiters. Key outcomes included improved efficiency, accuracy, and scalability, positioning Nuvola Talent as a leader in innovative recruitment solutions. The project highlighted the importance of seamless integration, generative AI's value, and the need for continuous improvement in AI technologies.*

## Customer Description

Nuvola Talent — accelerating the growth of elite AWS & Google cloud partners by providing industry-leading Talent as a service (TaaS).

## Description of Service

Nuvola Talent, a forward-thinking talent acquisition firm, sought to enhance its recruitment process by leveraging cutting-edge technologies. The firm faced challenges in efficiently processing and analyzing a large volume of resumes from potential candidates. They were looking for a solution that could not only automate this process but also intelligently evaluate and match candidates' skills with job requirements. To address these needs, Nuvola Talent partnered with New Math Data to implement a Generative AI-powered Resume Retrieval-Augmented Generation (RAG) solution using AWS technologies.



## Description of Solution

The solution developed for Nuvola Talent utilized several AWS services to create a robust and intelligent document processing system:

1. Amazon Bedrock: This service was employed to build and deploy large language models (LLMs) effectively. Bedrock ensured that the AI models were seamlessly integrated with other AWS services, enabling efficient natural language processing (NLP) capabilities.
2. AWS Lambda: Lambda functions were used to orchestrate the workflow, ensuring that resume processing tasks were executed in a scalable and cost-effective manner. These serverless functions triggered various stages of the document processing pipeline, from ingestion to analysis.
3. AWS Opensearch: Opensearch was utilized as a vector database for querying resumes. This enabled quick and accurate searches based on skill sets, experiences, and job requirements. The vector-based querying allowed for more nuanced and contextual search results, which traditional keyword-based searches could not achieve.

The integration of these services facilitated a seamless pipeline where resumes were ingested, processed for relevant information, and stored in a searchable format. The Generative AI models, powered by Amazon Bedrock, analyzed the text to extract key skills and experiences, which were then indexed in AWS OpenSearch for efficient retrieval.

## Description of Outcome

The implementation of the Generative AI-powered Resume RAG solution led to significant improvements in Nuvola Talent's recruitment process:

- Efficiency: The automated processing of resumes reduced the time required to evaluate candidates from days to mere hours. This allowed recruiters to focus on strategic decision-making rather than administrative tasks.
- Accuracy: The solution provided more accurate matches between candidates' skills and job requirements. This resulted in a higher quality of shortlisted candidates, increasing the likelihood of successful placements.
- Scalability: Leveraging AWS Lambda ensured that the solution could handle varying volumes of resumes without any degradation in performance. This scalability was crucial for managing peak hiring seasons.

- User Experience: Recruiters found the new system intuitive and easy to use. The efficient search capabilities of AWS OpenSearch allowed them to quickly find the best candidates for each role.

## Lessons Learned

The project provided several key insights:

1. Integration is Key: Seamless integration between different AWS services was crucial for the success of the project. Amazon Bedrock, AWS Lambda, and AWS OpenSearch worked in harmony to create a cohesive solution.
2. Scalability and Flexibility: Using serverless architecture with AWS Lambda provided the necessary scalability and flexibility to handle different workloads efficiently. This approach proved to be cost-effective and easy to manage.
3. Generative AI Value: The adoption of Generative AI significantly enhanced the quality of resume processing. The ability of LLMs to understand and analyze natural language resulted in more accurate candidate evaluations.
4. Continuous Improvement: The solution was designed to be adaptable. As new AI models and technologies emerge, Nuvola Talent can easily integrate these advancements into its existing pipeline, ensuring it stays ahead in the competitive talent acquisition market.

In conclusion, the collaboration between Nuvola Talent and New Math Data demonstrated the transformative power of Generative AI and AWS technologies in revolutionizing the recruitment process. The successful implementation of this intelligent document processing system has positioned Nuvola Talent as a leader in innovative talent acquisition solutions.