



CASE STUDY

AI-Powered Trademark Classification System Using Amazon Bedrock

Sterne Kessler Goldstein & Fox (SKGF) partnered with Mactores Cognition Inc. to assess the feasibility of implementing an AI-powered trademark classification system using Amazon Bedrock. The goal was to drastically reduce classification time, improve accuracy, ensure strong legal compliance, and enable faster client service and operational efficiency.



Case Study Summary

- Completed a comprehensive GenAI assessment in **7 weeks** with a 24-week implementation roadmap.
- Designed a system capable of processing trademark classifications in under 2 minutes.
- Enabled hybrid retrieval across **76,000+** USPTO records using vector search and BM25.
- Achieved an accuracy target of 85%+ with cross-encoder re-ranking for higher precision.
- Projected **5x–7x** ROI in the first year with a 6–8 month payback period.
- Estimated monthly savings of **\$60,000** at 100 trademark applications.
- Implemented a secure, serverless architecture governed by Bedrock Guardrails.
- Recommended Claude 3.5 Sonnet as the primary reasoning model.

About The Customer



Sterne Kessler Goldstein & Fox PLLC (SKGF) is a leading U.S. intellectual property law firm specializing in trademarks, patents, and IP strategy. With a large volume of trademark applications and high standards for accuracy and compliance, SKGF required an intelligent automation strategy to streamline its classification workflow.



Customer Situation

SKGF's trademark classification process was largely manual, requiring attorneys to spend 1–2 hours per application. The growing complexity of trademark classifications across 45 Nice Classes, combined with USPTO rejection rates reaching 57%, made the process time-consuming and error-prone. The firm faced mounting pressure to reduce turnaround time without compromising quality.

At the same time, clients demanded faster service and predictable costs. SKGF needed a solution that could accelerate classifications while ensuring strong compliance, auditability, and attorney oversight. They wanted a system that could scale with their workload and maintain the firm's high standards of confidentiality and legal accuracy.



Our Approach

Mactores conducted a focused seven-week GenAI assessment to understand SKGF's trademark classification workflows, data landscape, and compliance requirements. Historical trademark records, document formats, and attorney review patterns were analyzed to identify where AI could safely augment legal judgment without introducing risk.

Based on these findings, Mactores designed a scalable, multi-agent architecture on AWS. The approach centered on hybrid retrieval over **76,000** USPTO records using Amazon OpenSearch with vector search and BM25, orchestrated through Amazon Bedrock with Claude 3.5 Sonnet, ensuring high accuracy, traceability, and compliance through built-in guardrails.

Business Outcomes

The assessment confirmed that SKGF could reduce classification time from **60–120** minutes to less than 10 minutes and achieve **85%+** accuracy, leading to estimated monthly savings of **\$60,000** at 100 applications per month, with a projected ROI of **5x to 7x** in the first year..

Technical Outcomes

The solution was designed as a secure, serverless, and event-driven AWS architecture capable of processing trademark classifications at scale. AWS Textract extracted text from complex legal documents stored in Amazon S3, triggering automated workflows coordinated through AWS Step Functions and AWS Lambda.

Hybrid retrieval was enabled using Amazon OpenSearch with vector search and BM25, supported by cross-encoder re-ranking for precision. Amazon Bedrock orchestrated Claude 3.5 Sonnet and Titan Text Embeddings, with Aurora Serverless v2 and DynamoDB handling structured data and low-latency caching. End-to-end encryption via AWS KMS and Bedrock Guardrails ensured security, compliance, and reliable AI behavior.

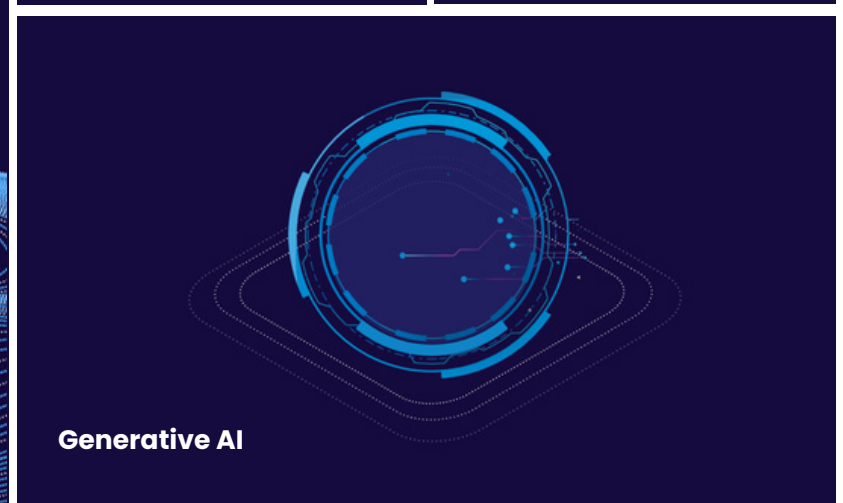
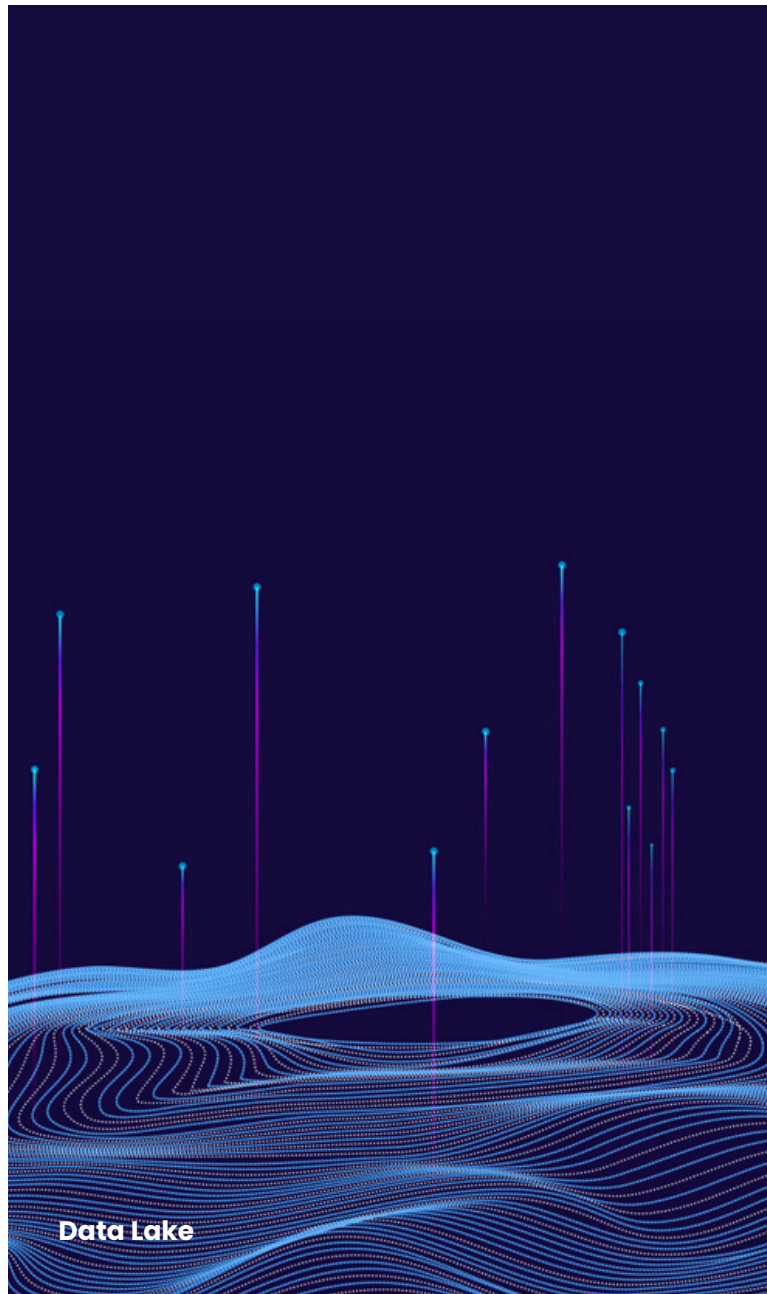


Getting Started

SKGF initiated the engagement by signing the assessment SOW and launching the discovery phase with Mactores. During this phase, existing workflows were mapped, data sources were inventoried, and security and integration readiness were evaluated. This created a clear baseline and identified the most impactful areas for GenAI-driven automation.

Following the discovery, the implementation roadmap was finalized. Secure AWS infrastructure was designed, AI agents and retrieval pipelines were defined, and an attorney-facing workflow was planned. A pilot phase was outlined to validate accuracy, usability, and adoption before a full production rollout, ensuring the solution delivered measurable value from day one.

Our
Solutions



Our Process

Digital transformation via assessments, migration or modernization

We work alongside your tech team to assess and strategize what you need and how to implement the right data solutions on time, on budget and with c-suite buy in.



Assess

- Discovery Automation
- Future State Assessment
- GAP Analysis
- End State
- Road Map
- TCO



Migrate

- Strategy
- Execution
- Migrate
- Migration Acceleration



Modernize

- StrategyFuture State
- Design
- Build
- Automate

AWS Validated Competencies



AWS Validated Service Deliveries



www.mactores.com/lets-talk

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