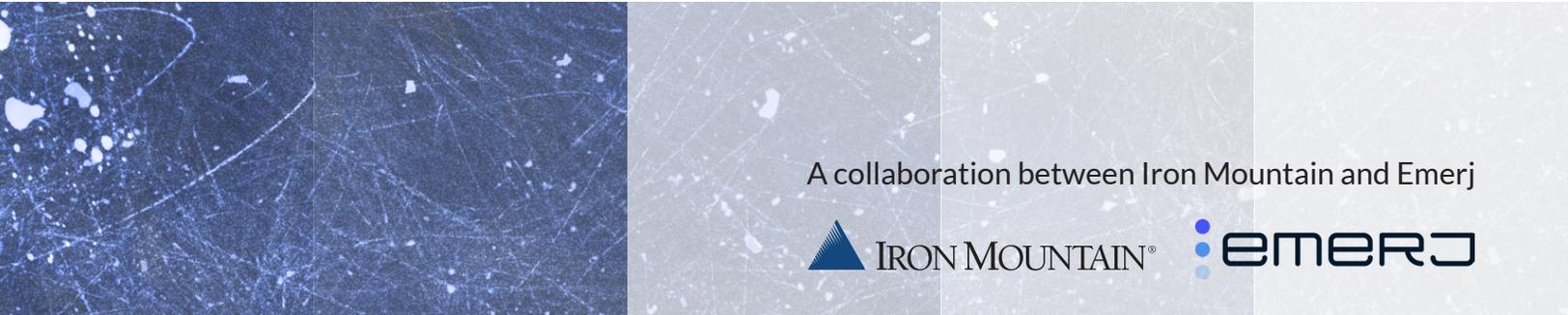


AI-Enabled Search and Discovery

for Claims Processing and Fraud Detection



A collaboration between Iron Mountain and Emerj



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AI-ENABLED SEARCH AND DISCOVERY FOR CLAIMS PROCESSING AND FRAUD DETECTION

An Introduction

Large insurance companies have been experimenting with AI since the middle of the 2010s, [piloting chatbots and collecting telematics data for future AI projects](#). The insurance industry more than many others relies on the collection of data to make critical business decisions. Whether writing policies, or processing claims efficiently the way insurers employ data will determine the lifetime value of the customer.

One possible first step toward taking advantage of AI in insurance lies in understanding what Emerj, the AI research company, calls the [AI Opportunity Landscape](#): a map of what is possible and what is working with AI in a given industry. As part of their recent focus on insurance, Emerj found that 46% of AI companies in insurance provide solutions for claims.

One way that AI could augment the workflows of claims adjusters is via AI-enabled search and discovery software, also known as enterprise search and information extraction software. These applications allow claims adjusters to search an insurance carrier's database for historical claims, helping them with four key parts of the claims process:

- Digitizing claims
- Ensuring completeness and accuracy across claims forms and supporting documents
- Determining the optimal amount that should be paid out to a claimant
- Determining if a claim is fraudulent

Emerj also found that, as of 2019, approximately 32% of AI companies in insurance provide search and discovery solutions, which ties applicant risk assessment for the most prominent AI capability in the industry. AI companies clearly see a need among insurance carriers for searching their all too common siloed databases.

That said, claims processing still involves a large amount of paper. Many claims are still filed with paper forms that are scanned and then emailed or faxed to the insurance carrier. Employees at the carrier then have to manually enter the information in these paper forms into digital forms in the carrier's system.

In addition, claims adjusters in property and casualty insurance often need to drive to the location of a damaged property or vehicle to take pictures and notes about the damage. In some cases, adjusters hand write their notes on paper. In the event of an accident or injury, adjusters also need to collect hospital records and/or police reports, which may be faxed or emailed to the insurance carrier. All of these documents often have to be manually entered into the insurance carrier's system, a process which has a greater risk of producing errors and in many cases not the most optimal use of a claims adjuster's time.

Many insurance carriers have attempted to reduce costs by outsourcing much of the manual data entry involved in claims processing. Although this may save the insurance carrier money, it doesn't reduce errors and it doesn't improve efficiency. This means customers may wait several additional days for their claims to be approved.

One way for insurance carriers to gain an advantage over their competitors is to reduce the time it takes to approve a claim without reducing the accuracy with which data is entered into an insurance carrier's sys-

tem. AI has the ability to auto classify and normalize input data from multiple source formats (video, physical paper, pictures etc.) into the carriers' systems for a comprehensive analysis.

DIGITIZING SCANNED CLAIMS FORMS AND SUPPORTING DOCUMENTS

Document digitization software may be the first step in speeding up the claims process by automating manual data entry. Insurance carriers traditionally use optical character recognition (OCR) software to digitize text from scanned claims forms, but OCR struggles with accuracy.

OCR software sometimes has trouble digitizing text with special formatting, such as italics, underlining, and bolding. Signatures and other handwritten text are also a challenge for OCR software. In addition, OCR software sometimes digitizes text into word documents, disregarding the formatting within the paper document. What this means is that manual data entry is still required on

the part of the insurance carrier; employees have to copy and paste the digitized text into digital versions of the claim it digitized with the OCR software.

Machine vision-based document digitization software could remedy these problems. AI can improve over time, which is not the case for more rigid OCR. Machine vision software can be trained to increase the accuracy with which it digitizes printed and handwritten text and also to fill digital claim forms. This can save the insurance carrier on claims processing costs, including overhead expenses for outsourced data entry. As a result, claimants could receive their payments quicker, which could increase their brand loyalty.

ENSURING THE COMPLETENESS AND ACCURACY OF A CLAIM

Once a claim is digitized, search and discovery software can help claims adjusters verify that it is filled out completely and correctly, ensuring a level of automatic quality control unavailable to adjusters without AI.

For example, some enterprise search applications can alert adjusters if a claims form is missing information such as a signature or a date. They can also help claims adjusters spot discrepancies in a claimant's name across several documents. The claimant

may write a nickname of theirs on the claim, which would differ from the legal name that shows up on the hospital records, police reports, and other supporting documents the claims adjuster collects about an incident. Enterprise search software could pick up on this, which could prompt the claims adjuster to reach out to the claimant to correct their name on the form. This can mitigate the need for claims adjusters to correspond with claimants multiple times before approving a claim.

AI-Enabled Search and Discovery For Determining Claims Payments

Enterprise search applications can also help claims adjusters determine how much to pay a customer for their claim. Emerj's research shows that, as of 2019, approximately 16% of AI companies in insurance provide solutions for optimizing claims payments. Claims adjusters are often tasked with sifting through historical claims forms in order to determine the optimal payment a claimant should be paid given all of the information available to them about the claim at hand. Enterprise search applications can expedite this process.

For example, claims adjusters at auto insurance companies can use AI to search for claims that involve specific makes, models, and colors. They could search "Black 2012 Jeep Grand Cherokee filed in the last 3 years," and the AI software could return claims involving these types of cars from the last three years. The adjuster could then search through only these claims instead of manually searching for claims involving black 2012 Jeep Grand Cherokees within a list of claims from the last three years.

More sophisticated software could allow for more complex searches, such as those involving the damage described in the claim. Claims adjusters could then use the payment amounts of these historical claims as a starting point for determining what to pay a claimant, adjusting the amount based on factors such as supply and demand in the claimant's city or region and prior damage to

the car that may have made the damage described on the claim worse.

AI-enabled search and discovery applications with machine vision features can also allow claims adjusters to search for claims filed with similar images. According to Anke Conzelmann, Director of Product Management at Iron Mountain, "Adjusters can simply ask for similar images to the one showing the damage for the claim they are working on and quickly find relevant claims that had similar damage."

For example, a claims adjuster following up on a homeowners insurance claim might want to search historical claims for fire damage to a particular piece of furniture, such as a sofa. Instead of describing the damage in a typed search query, the claims adjuster could upload a picture of the damaged sofa to the enterprise search software. The software could then return claims filed with similar images of sofas damaged in fires. The adjuster could then use the amounts of these claims as a benchmark for determining the payment amount of the homeowners insurance claim at hand.

That said, this enterprise search use-case varies in viability depending on the complexity of the search. Insurance carriers that want to search for claims with numerous variables will likely need to spend more time and money on labeling claims with appropriate metadata to prepare for adopting a robust AI-enabled search and discovery solution.

Currently, most AI applications for determining optimal claims payments are predicated on predictive analytics. Predictive analytics applications automate this decision, estimating the appropriate payment for a particular claim based on their own historical data.

Search and discovery applications, however, are useful for keeping the decision on how much to pay a claimant in human hands. These applications can be a way for insurance carriers to auto-

mate some of their claims process while keeping claims adjusters fully in the loop. It is also difficult to measure the ROI of a predictive analytics application for this use-case. In some cases, it can take years to determine if they are saving insurance carriers money, and if they aren't, they are likely wasting it by suggesting claimants receive more than they should. Search and discovery products allow adjusters to continue using their expertise on what to pay claimants for different claims while expediting their time to make that decision.

Enterprise Search for Claims Fraud Detection

Enterprise search applications also have use in claims fraud detection. Claims adjusters can search for past fraudulent claims across the insurance carrier's database in order to compare the claim they're working with to these instances of fraud. Sophisticated search and discovery applications may be able to narrow the adjuster's search so that it returns only similar claims that were previously flagged as fraud.

Search and discovery applications can also help claims adjusters identify new instances of claims fraud by allowing them to compare the incident described on a new claim with incident descriptions in historical claims that were never flagged as fraud. For example, a new claim may describe a car accident that is similar in detail and wording as historical claims that were filed by claimants with different names. The claims adjuster might then set aside these claims for further investiga-

tion, and a claims fraud specialist may find that these claims were all filed by the same person under different names, revealing long standing fraud.

Enterprise search applications equipped with machine vision also allow claims adjusters to search by image. The adjuster can upload images filed with the claim to the enterprise search software, and the software could return historical claims filed with the same image, which could point to a new instance of claims fraud. The adjuster could then alert a fraud specialist that can further investigate the claimant. Alternatively, the search may return images that were filed with claims that have already been flagged as fraud, allowing the adjuster to outright reject the claim at hand. This not only saves the claims adjuster time spent investigating potential fraud, but it also saves the insurance carrier the cost of paying a claimant for a fraudulent claim.

WHERE INSURANCE CARRIERS SHOULD FOCUS THEIR AI EFFORTS

While predictive analytics applications could help expedite the claims process, adopting them can require overhauling existing claims processing workflows, which has organizational ramifications. Right now, insurance carriers are merely testing the waters with solution providers for these applications.

But according to Emerj, large insurance carriers are adopting natural language processing-enabled search and discovery solutions more than solutions that often rely on predictive analytics; for example, on Emerj's score for the level of AI adoption in the enterprise, search and discovery applications score approximately 13% higher than risk assessment solutions for underwriting and 19% higher than solutions that optimize claims amounts.

As such, insurance carriers that want to augment their claims adjusters with AI may want to focus their automation efforts first on digitizing the data stored in their paper documents; then, they can benefit from cost-savings that could come with enterprise search solutions for reducing time spent in claims processing and claims fraud detection. This could prove to be a way for insurance carriers to gain an advantage over their competitors by retaining customers who are satisfied with having to wait less time for their claims to be approved.

Insurance carriers can also use the money they save from settling fewer fraudulent claims on opportunities for improving revenue. For example, they could experiment with predictive analytics applications for underwriting, allowing them to approve more policy applicants without added risk; or applications for personalized auto insurance policies, in which customers pay based on their driving behavior.

Search and discovery applications could greatly improve efficiencies in claims processing and claims fraud detection by way of digitizing paper claims and automating manual data entry, as well as automatically checking to make sure that claims and supporting documents are completed accurately and in full. In doing so, enterprise search applications allow claims adjusters to quickly determine the amount a claimant should be paid. This reduces claims leakage and prevents them from paying fraudulent claims by using search and discovery AI tools to detect anomalies across claims data.

About Emerj

Emerj is the AI research company that helps organizations develop AI strategies and make AI investments to reduce risk and improve their competitiveness. From the World Bank to global pharmaceutical companies, we work with leading organizations who need to make critical decisions about AI and technology strategy.

Our market research and advisory services are focused exclusively on competitive artificial intelligence strategy, and AI market insights. Through our proprietary research methods and network of global advisors, we keep a pulse on what's possible and what's working, mapping emerging AI capabilities and helping companies leverage them to win.

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About Iron Mountain

Iron Mountain Incorporated (NYSE: IRM) is the global leader for storage and information management services. Trusted by more than 225,000 organizations around the world, the company helps customers lower cost and risk, comply with regulations, recover from disaster, and enable a more digital way of working.

Iron Mountain InSight is a content services platform that provides actionable business insights and predictive analytics through Machine Learning (ML)-based classification of a company's physical and digital information, which adds structure, context, and meta-data to information to make it more usable. The resulting enriched content can then enable enhanced automated governance and workflows at an insurance carrier.