

## A leading US-based Workers Compensation insurer **transforms underwriting by leveraging external data and AI**



Developing insurance data pre-fill capability for client by leveraging external data ecosystem and AI/ML with 85%+ fill rate and ~90% accuracy levels, leading to correct policy binding and an efficient underwriting process.



# The Background

Our client is a leading Small and Medium Business insurance carrier in the US receiving thousands of applications annually from prospects and agents for Workers Compensation coverage. The current application approval and quote generation process requires customers / agents to answer **40+ questions**. The process is lengthy, iterative, and inefficient, leading to poor customer experience and low bind ratio. Further, more than 20% of information presented by customers is inaccurate leading to improper risk assessment and premium leakage downstream.

Identifying and prioritizing the right external sources that can provide relevant attributes for answering an UW question is crucial for an efficient underwriting function. Building a data extraction framework predicting information leakage using AI/ML algorithms can improve data accuracy, thereby reducing premium leakage.

Can an **AI/ML led information extraction and validation** help our client to enhance UW effectiveness and improve risk assessment?

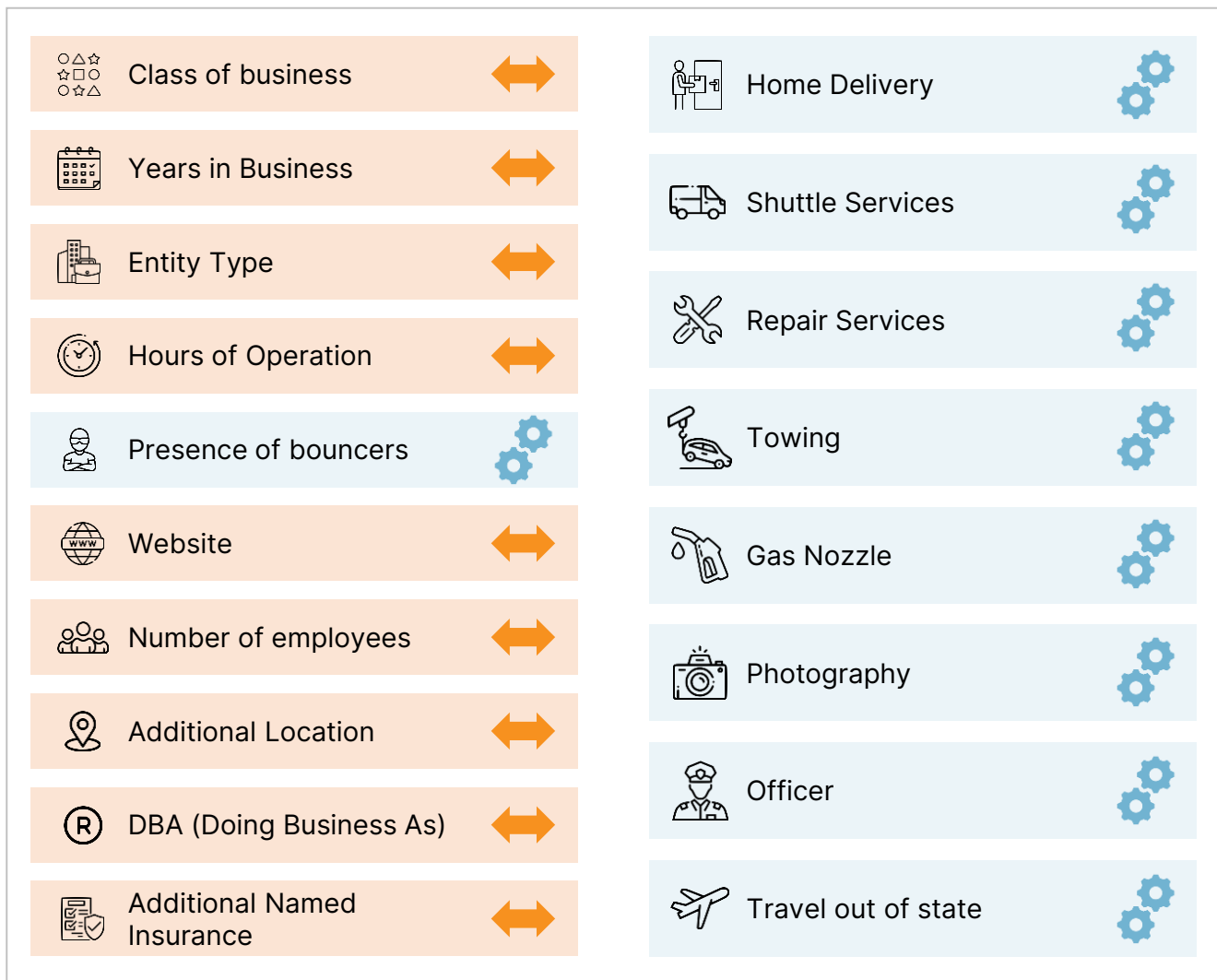
## Key Challenges

- \ **Challenge 1: Triangulation of data from multiple sources** is a massive and complex task, required to deliver acceptable (over 90%) fill rate and accuracy
- \ **Challenge 2: Business names and addresses** in application forms often are not an exact match to businesses found in external sources.
- \ **Challenge 3: External data is mostly unstructured**, and one needs to extract the right signals and perform **conflict resolution**.
- \ **Challenge 4: Given external dependency on various source website layouts**, current solution needs **continuous maintenance**, thereby must be customizable and scalable.

# Our Solution

**Step 1: Question Identification & Prioritization:** Identifying and prioritizing key questions that will have high impact with prefill

## UW questions part of the pre-fill solution



Directly extracted questions

Modeled questions

**Step 2: Extraction Framework Development:** Build a data extraction framework with appropriate data science techniques, triangulation algorithms, and application engineering components

# Our Solution

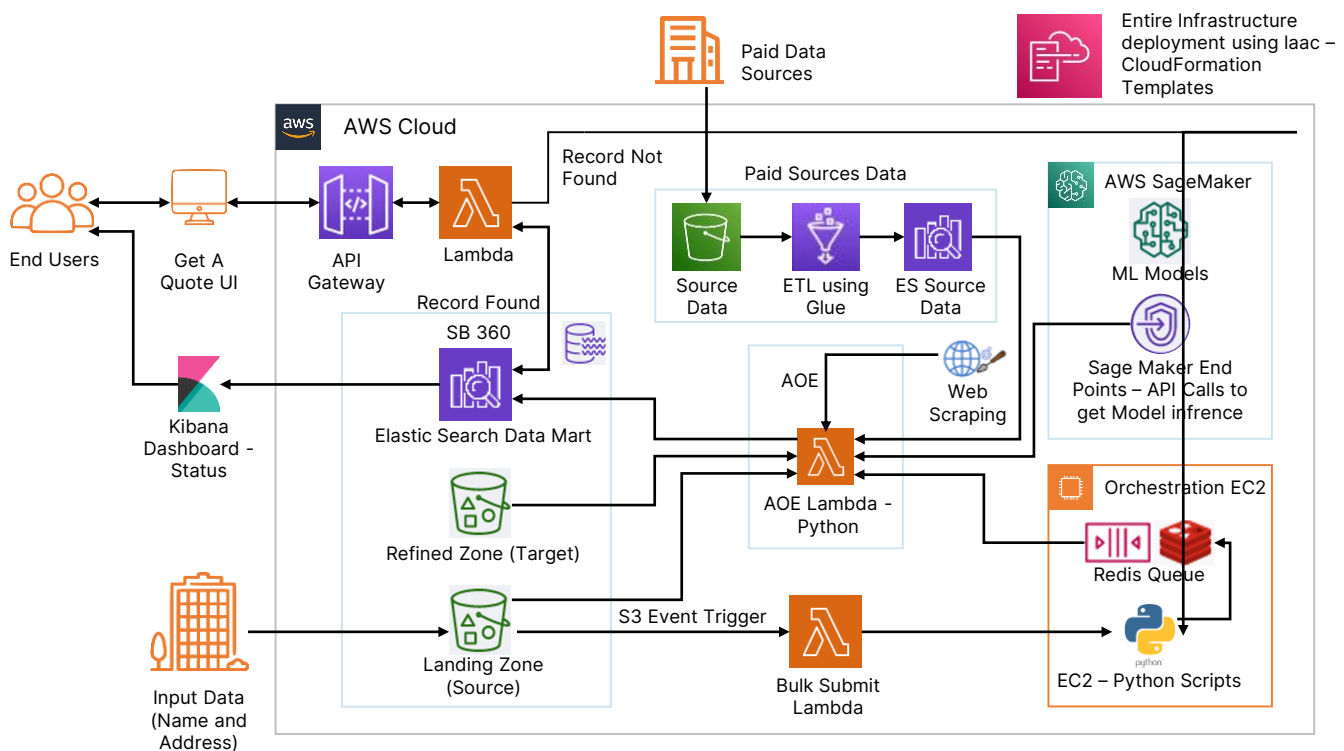
**Step 3: Information Prediction:** Use AI and ML to predict information when it is not directly available from the external data ecosystem



# Tech Stack

- / Developed solution on AWS Platform using multiple components including, S3, Lambda, EC2, Glue and SageMaker
- / Leveraged computer vision to extract information from images to determine exposure
- / Applied advanced NLP techniques for extracting information from unstructured text data
- / Used elastic matching and fuzzy logic for triangulation and validation of information

# Solution Architecture



AWS Tech Stack

|  |            |  |                |  |             |  |               |
|--|------------|--|----------------|--|-------------|--|---------------|
|  | AWS S3     |  | AWS EC2        |  | CloudWatch  |  | AWS Glue      |
|  | AWS Lambda |  | Elastic Search |  | API Gateway |  | AWS SageMaker |

# Value Delivered

## Transformed underwriting process through AI/ML driven information extraction and validation

- 85%+ fill rate with 90%+ accuracy for all questions
- Improved risk selection due to reduced agent bias, leading to minimal premium leakage
- Simpler and more efficient UW process driven by fewer iterations resulting in enhanced customer satisfaction and bind ratio



## About Us

Tiger Analytics is a global leader in AI and analytics, helping Fortune 1000 companies solve their toughest challenges. We offer full-stack AI and analytics services & solutions to help businesses achieve real outcomes and value at scale. We are on a mission to push the boundaries of what AI and analytics can do to help enterprises navigate uncertainty and move forward decisively. Our purpose is to *provide certainty to shape a better tomorrow.*

Being a recipient of multiple industry awards and recognitions, we have 4000+ technologists and consultants, working from multiple cities in 5 continents.

[www.tigeranalytics.com](http://www.tigeranalytics.com)

US | UK | Canada | India | Singapore | Australia