2025 LIFE INSURANCE AND ANNUITY CONFERENCE

Reimagine Tomorrow

Unlocking Efficiency: How GenAI Transforms Actuarial Analysis, Fraud Prevention and Compliance

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ACLI
Financial Security for Life

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Agenda

- Evolution of actuarial profession with AI
- Stage 1 – Internal Efficiencies
- Stage 2 – Agentic AI
- Stage 3 – Autonomous recommendations

Evolution of Actuarial Profession with AI

- Efficiency systems (Automate ‘How’) -> Systems of innovation (Explore Why? What next?)
  (Generate stable predictable output) -> (Generate emerging solutions)

Pricing

- Dynamic pricing using real-time market data
- Scenario testing for new products

Valuation

- Impact of accelerated mortality improvements through agentic AI running Monte Carlo simulations to model scenarios

Experience Analysis

- Lapse rate effects for interest rate fluctuations, economic conditions and policyholder demographic.

ALM

- Extreme scenario, Reverse Stress testing
- Dynamic Hedging strategies

Stage 1 - Internal Efficiencies (Quick Wins)

- Code conversions or migrations
  - Microsoft/Github Copilots, Cursor, Claude
- Extract structured data from unstructured data
  - Microsoft Document Intelligence (layout discovery etc.)
- Internal Project efficiencies –
  - Knowledge bases through RAGs (Infrastructure, document storage, data prep, model, evaluation, frontend)
  - Spreadsheet LLMs

Stage 2 - AI Agents – The new realm

- Expanding capabilities of knowledge graphs and RAGs to connected agents.
  - Key enablers
    - New capabilities such as MCP – Model Context Protocol
    - Token limits hurdle
    - Data lake houses
    - Talent
    - Governance/Evaluations

- Emerging capabilities for agents to run autonomous event-based workflows
  - Example – Agent simulating stochastic modeling based on new (real-time) data availability and updates key reports. Automates recalibration of pricing models as new data streams in, reducing manual effort by up to 50%.

Stage 3 – Autonomous recommendations

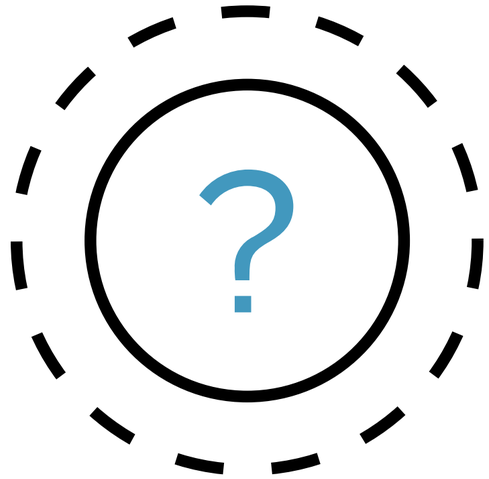
- Systems not just analyzing data and automating workflows but also making recommendations, by optimizing outcomes across interconnected actuarial domains
  - Example - How pricing changes (e.g., premium adjustments) impact valuation reserves and ALM strategies simultaneously, recommending optimal actions to balance profitability and solvency.

- Human in the loop

- Emerging capabilities –
  - Advanced Reasoning Models
  - XAI (Explainability and chain of thought reasoning)
  - Computer Use capabilities (Claude)
  - Autonomous capabilities
  - Constraint based (Boxing) governance capabilities

Q&A

If you have a question, please feel free to ask.



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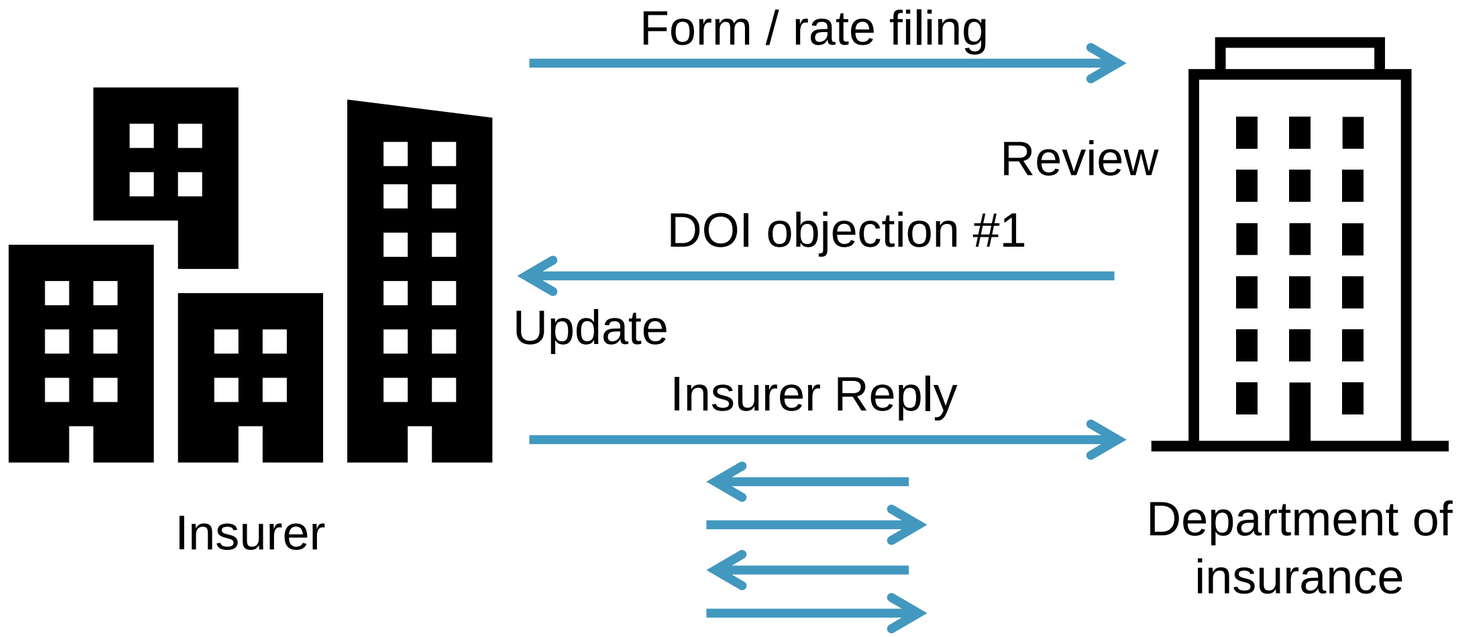
Regulatory Compliance

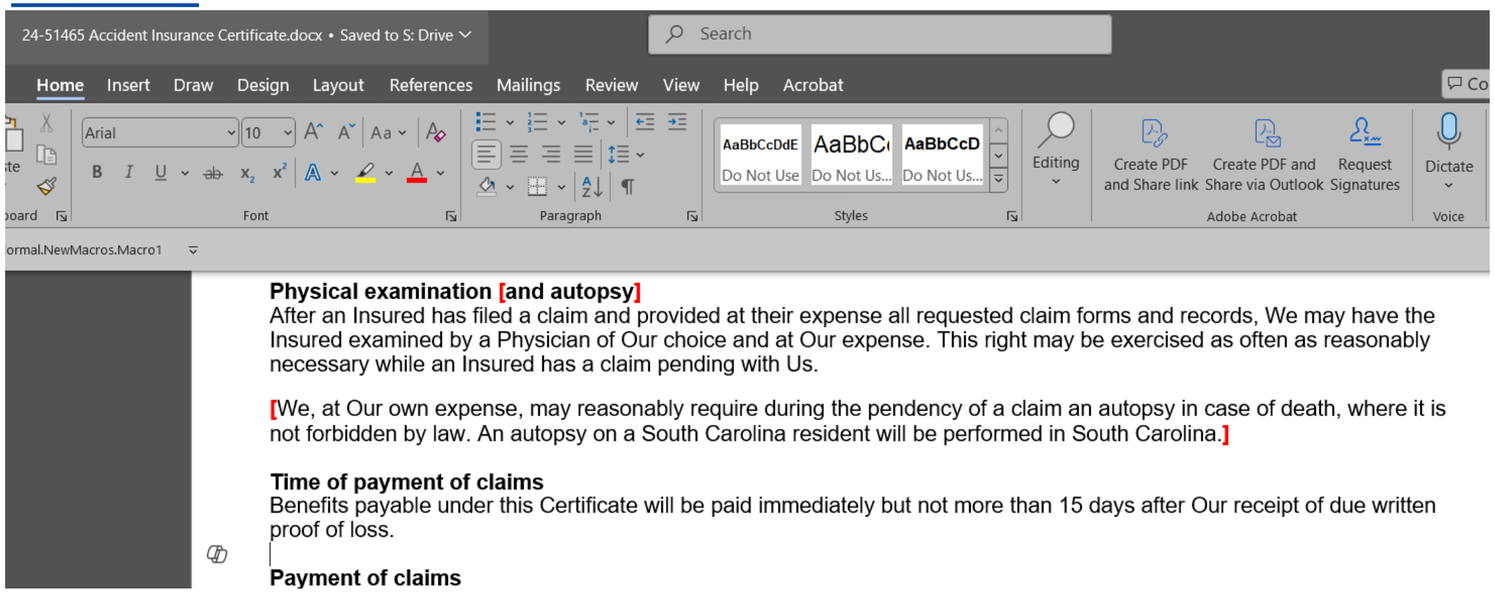
Typical filing process

A&H product forms and rates



Regulatory Compliance

Generic



State-specific edit based on the rule to improve regulatory compliance

Time of payment of claims
Benefits payable under this Certificate will be paid immediately but not more than 15 days after Our receipt of due written proof of loss for clean claims and within 15 days after Our receipt of additional information for other than clean claims. If payable benefits are not paid within these prescribed times, interest will accrue at a rate of 15% annually.

Payment of claims

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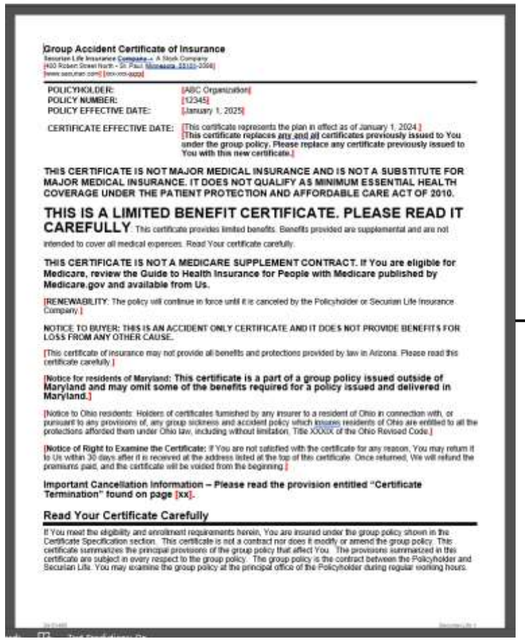
Regulatory Compliance

Accident Certificate - generic



Group Accident Certificate of Insurance

Securian Life Insurance Company, a Stock Company
[400 Robert Street North – St. Paul, Minnesota 55101-2098]
[www.securian.com] [xxx-xxx-xxxx]

POLICYHOLDER: [ABC Organization]
POLICY NUMBER: [12345]
POLICY EFFECTIVE DATE: [January 1, 2025]

CERTIFICATE EFFECTIVE DATE: [This certificate represents the plan in effect as of January 1, 2024.] [This certificate replaces any and all certificates previously issued to You under the group policy. Please replace any certificate previously issued to You with this new certificate.]

THIS CERTIFICATE IS NOT MAJOR MEDICAL INSURANCE AND IS NOT A SUBSTITUTE FOR MAJOR MEDICAL INSURANCE. IT DOES NOT QUALIFY AS MINIMUM ESSENTIAL HEALTH COVERAGE UNDER THE PATIENT PROTECTION AND AFFORDABLE CARE ACT OF 2010.

THIS IS A LIMITED BENEFIT CERTIFICATE. PLEASE READ IT CAREFULLY. This certificate provides limited benefits. Benefits provided are supplemental and are not intended to cover all medical expenses. Read Your certificate carefully.

THIS CERTIFICATE IS NOT A MEDICARE SUPPLEMENT CONTRACT. If You are eligible for Medicare, review the Guide to Health Insurance for People with Medicare published by Medicare.gov and available from Us.

[RENEWABILITY: The policy will continue in force until it is canceled by the Policyholder or Securian Life Insurance Company.]

NOTICE TO BUYER: THIS IS AN ACCIDENT ONLY CERTIFICATE AND IT DOES NOT PROVIDE BENEFITS FOR LOSS FROM ANY OTHER CAUSE.

[This certificate of insurance may not provide all benefits and protections provided by law in Arizona. Please read this certificate carefully.]

[Notice for residents of Maryland: **This certificate is a part of a group policy issued outside of Maryland and may omit some of the benefits required for a policy issued and delivered in Maryland.**]

[Notice to Ohio residents: Holders of certificates furnished by any insurer to a resident of Ohio in connection with, or pursuant to any provisions of, any group sickness and accident policy which insures residents of Ohio are entitled to all the protections afforded them under Ohio law, including without limitation, Title XXXIX of the Ohio Revised Code.]

[**Notice of Right to Examine the Certificate:** If You are not satisfied with the certificate for any reason, You may return it to Us within 30 days after it is received at the address listed at the top of this certificate. Once returned, We will refund the premiums paid, and the certificate will be voided from the beginning.]

Important Cancellation Information – Please read the provision entitled "Certificate Termination" found on page [xx].

Read Your Certificate Carefully

If You meet the eligibility and enrollment requirements herein, You are insured under the group policy shown in the Certificate Specification section. This certificate is not a contract nor does it modify or amend the group policy. This certificate summarizes the principal provisions of the group policy that affect You. The provisions summarized in this certificate are subject in every respect to the group policy. The group policy is the contract between the Policyholder and Securian Life. You may examine the group policy at the principal office of the Policyholder during regular working hours.

Compliance Intelligence AI Model

State: Alaska

Section: time of payment of claims

Proposed Revision:

Response: Benefits payable under this Certificate will be paid immediately but not more than 15 days after Our receipt of due written proof of loss for clean claims and within 15 days after Our receipt of additional information for other than clean claims. If payable benefits are not paid within these prescribed times, interest will accrue at a rate of 15% annually.

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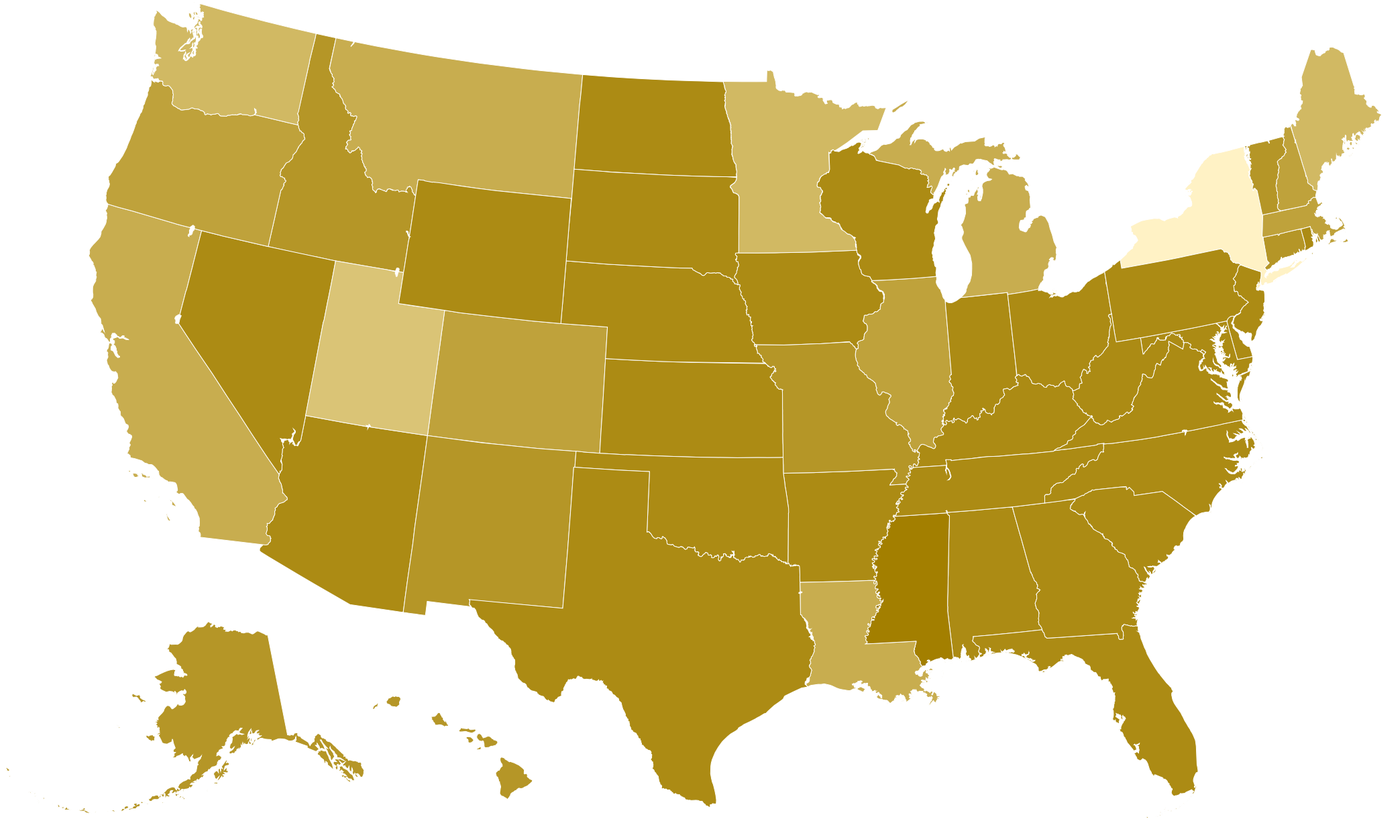
Milliman Compliance Readiness Score – nationwide results

Model applies known rules to all state variations



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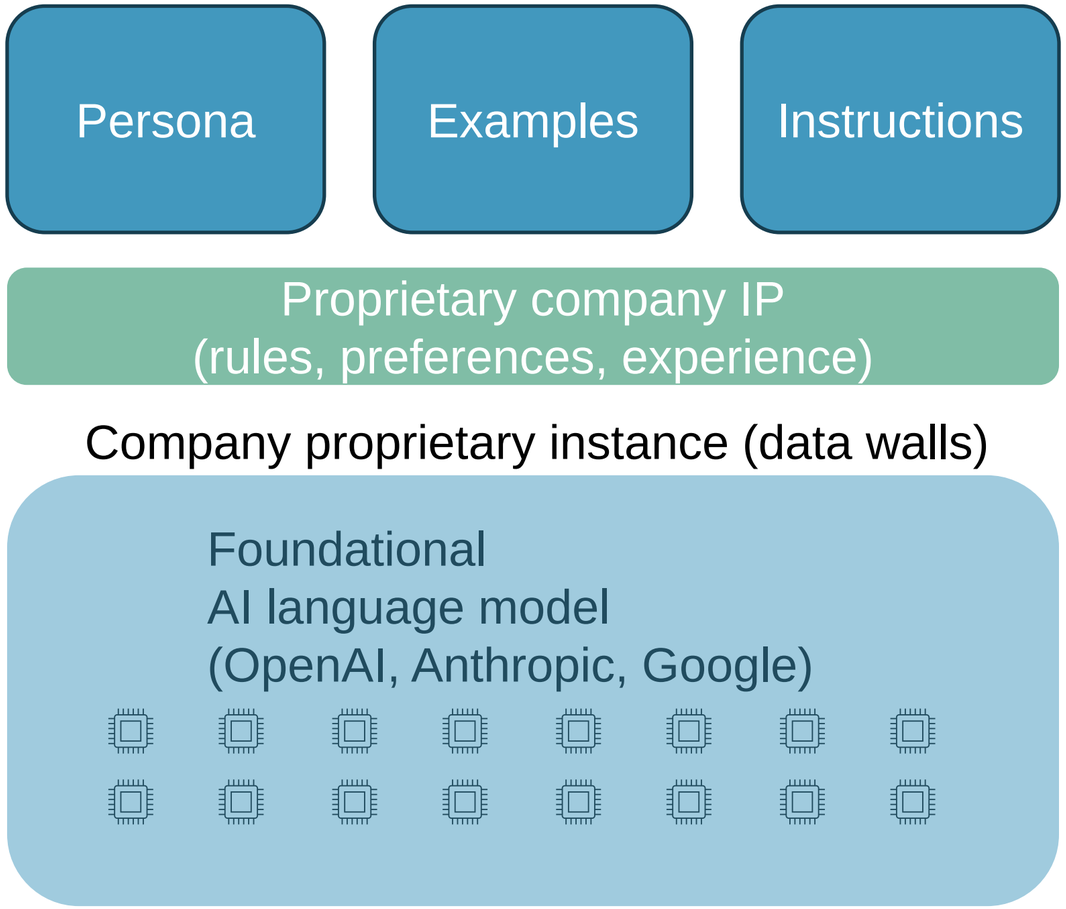
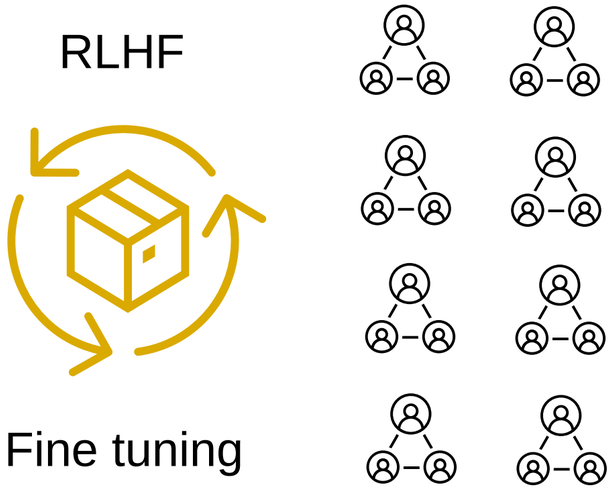
Compliance Intelligence AI model architecture





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Regulatory Compliance

Insurer benefits

Codification: preferences and rules

- Consistent application

Scalable use of company IP and preferences

- Documentation
- Knowledge transfer

Consistent regulatory approach

- Speed to market
- Competitive advantages
- Empowered compliance workforce

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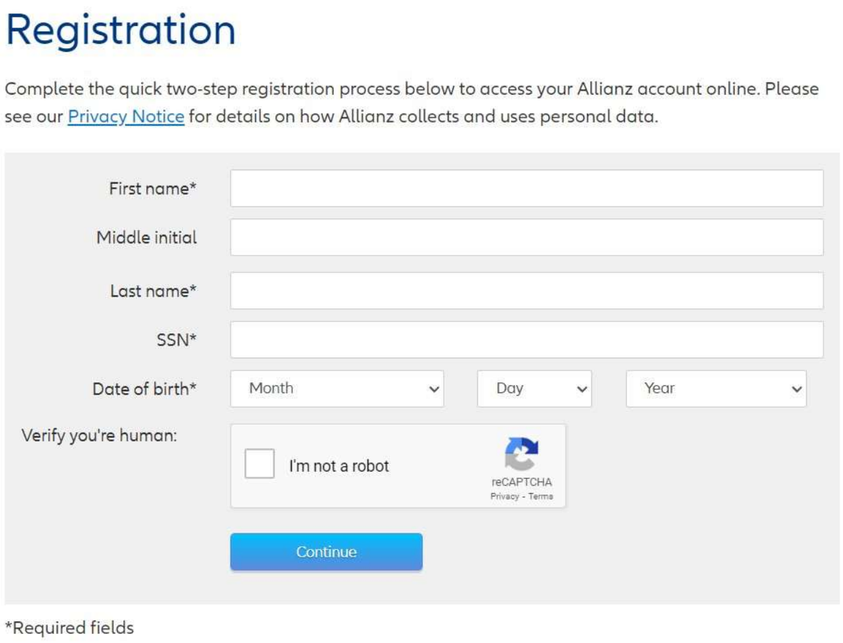
Fraud Prevention & Detection

PROBLEM STATEMENT:

- Large volume of customer web registrations
- Need to ensure online registrations are legitimate
- Growing fraud external threats related to Identity Fraud and Account Takeover

SOLUTION:

- Implement an AI model that enhances efficiency and scalability in detecting fraudulent web registrations



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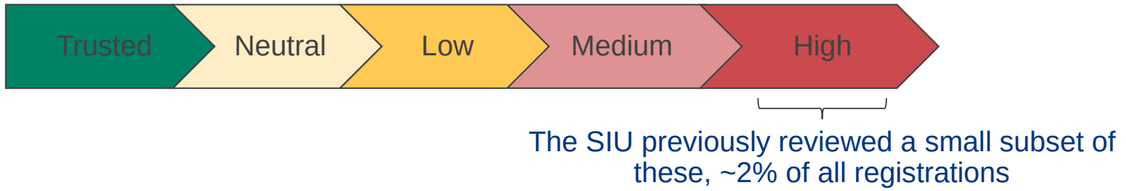
Fraud Prevention & Detection (cont.)

BACKGROUND:

- Utilization of a third-party vendor to detect potential fraud in the web registration process, using multiple data points and weighted rules to generate alerts of potential fraudulent online registrations for review by the SIU
- Vendor tool classifies each registration with a score and risk rating
- Due to the time to conduct reviews, as well as risk-based approach, SIU would review only web registrations scored as very high-risk
- In addition, vendor tool is a rule-based tool and updating applicable rules and weightings within the tool is very manual and vendor-dependent, resulting in a lag in flagging new risk trends as well as a time-consuming analysis exercise to update rules and weights.



SOLUTION:

- Build an AI model to flag fraudulent online registrations, using the Random Forest algorithm that flags suspicious registrations and sends them to the SIU for review
- Model provides coverage for all web registration activities, instead of just "high risk" ones
- Model trained on 4 years of historical data using vendor tool digital behavior data
- Most important predictors align with business understanding (e.g. IP address patterns, email and phone number uniqueness, etc.)

Compared to the vendor tool alone, the AI model detects 52% more fraudulent activity at 30% lower false positive rate

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Fraud Prevention & Detection (cont.)

The model is estimated to have helped prevent **$22M+ USD** in attempted fraudulent withdrawals in 2024

Fraud Risk Management

Timing - Enables early detection of potentially web fraudulent activity

Scope - expands scope of detection by identifying potentially fraudulent registrations across all scores

Enhanced Fraud Control Environment

Strengthen overall fraud control environment

Resources

Allows SIU to more effectively utilize their investigative time
Ability to gain scalability with evolving fraud trends and volumes

Trust & Reputation

Increases customer trust when we're able to identify a fraudulent registration before any additional unauthorized activity occurs

Fraud Management & Investigative efficiencies

AI Call transcription

AI Call summarization / key word search

AI Document summarization & questions

AI Letter / Statement writing

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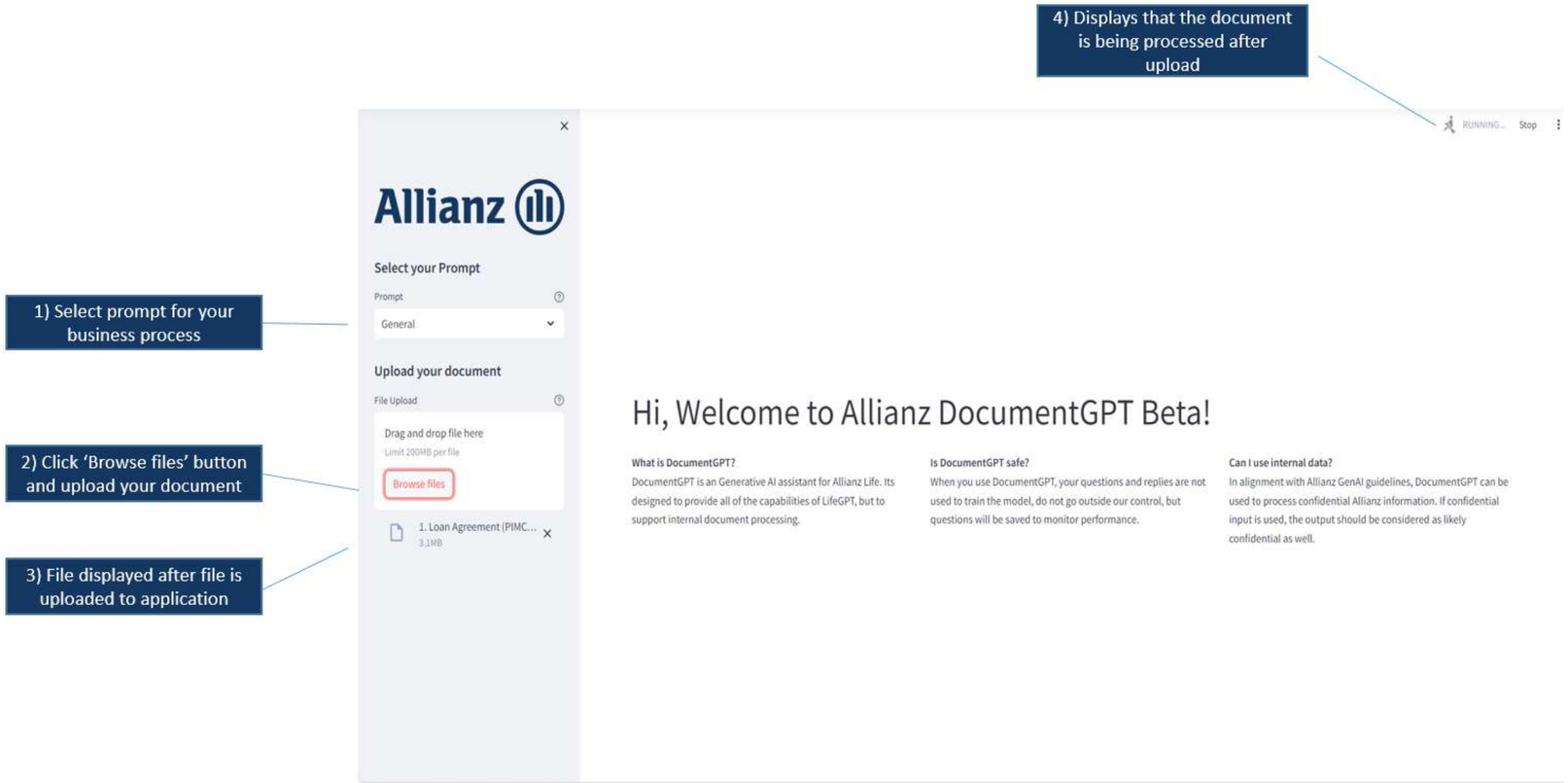
Fraud Management & Investigative efficiencies



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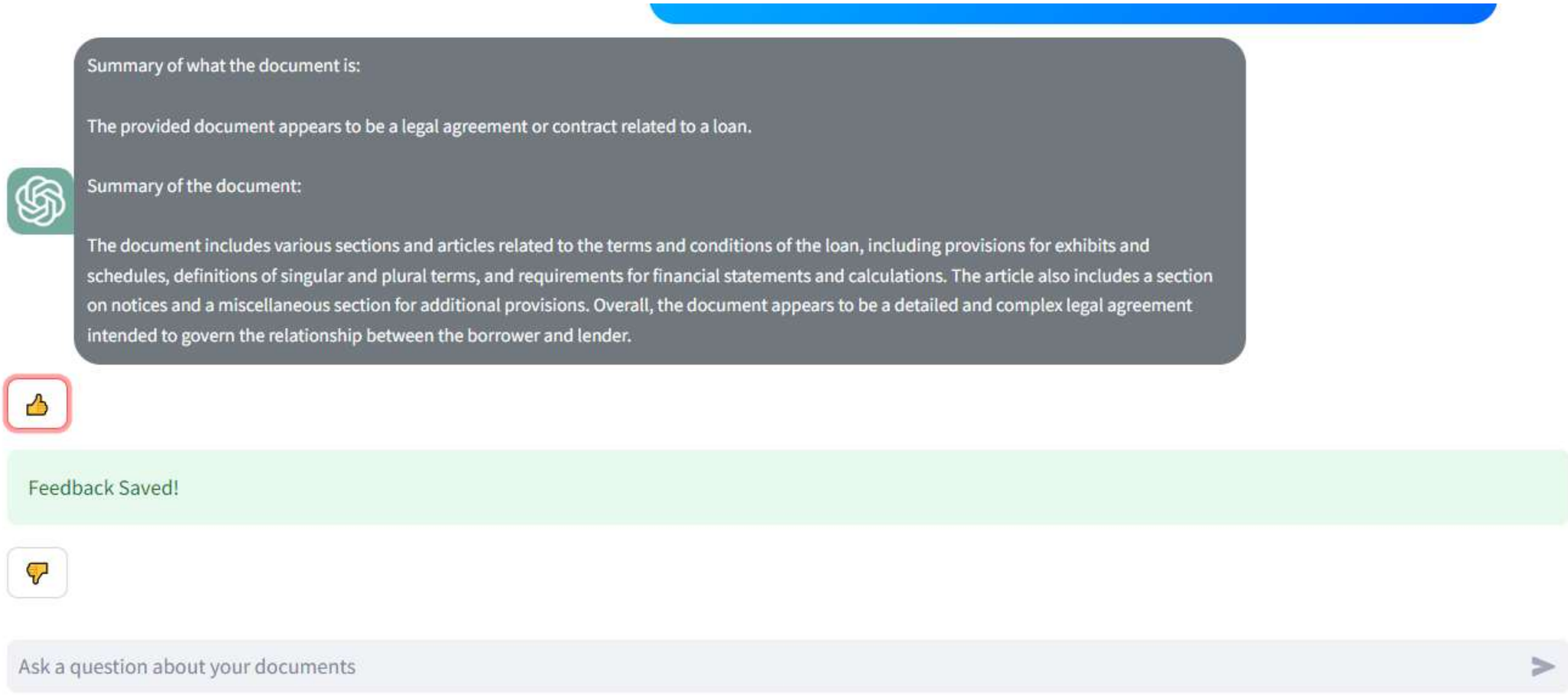
Fraud Management & Investigative efficiencies



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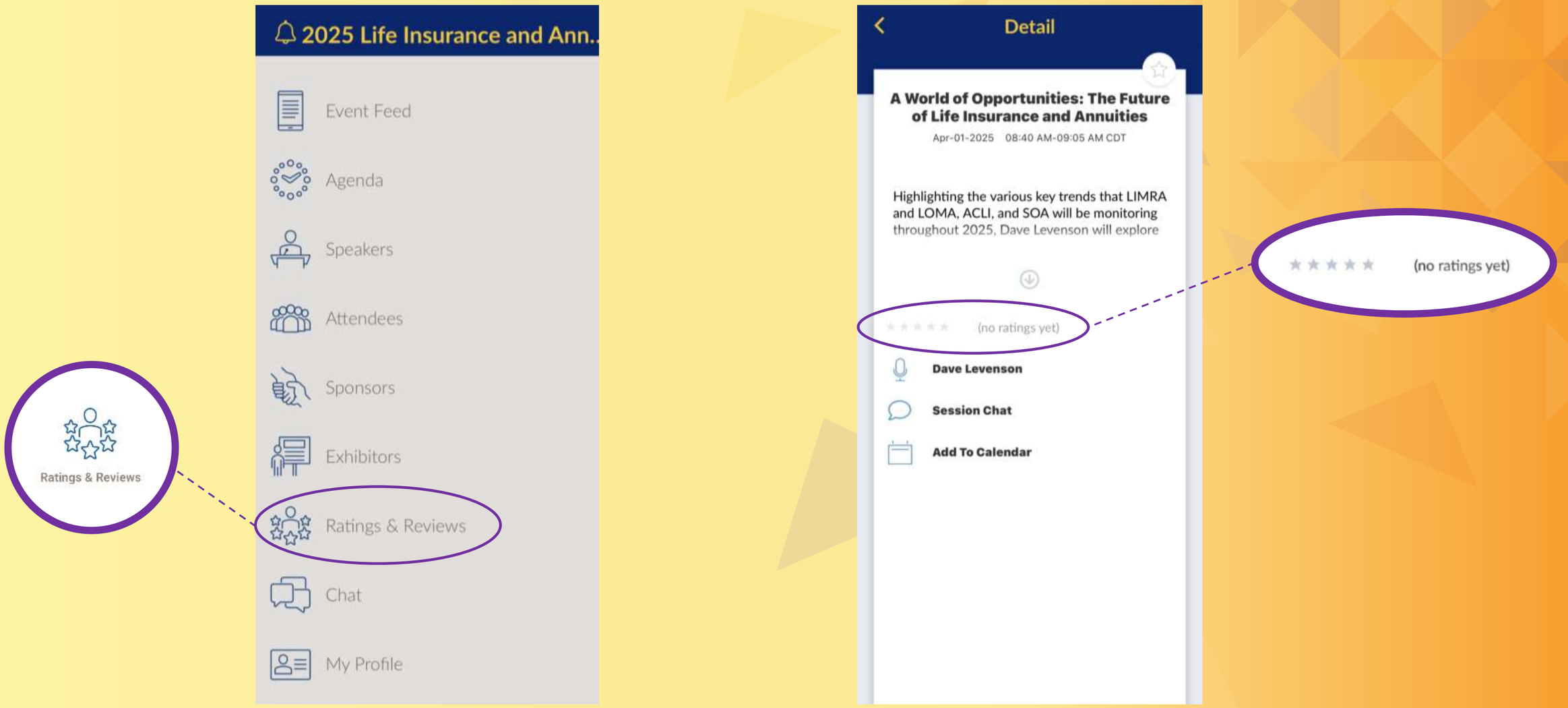
Please Provide Your Feedback on the Conference App



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Thank You

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