



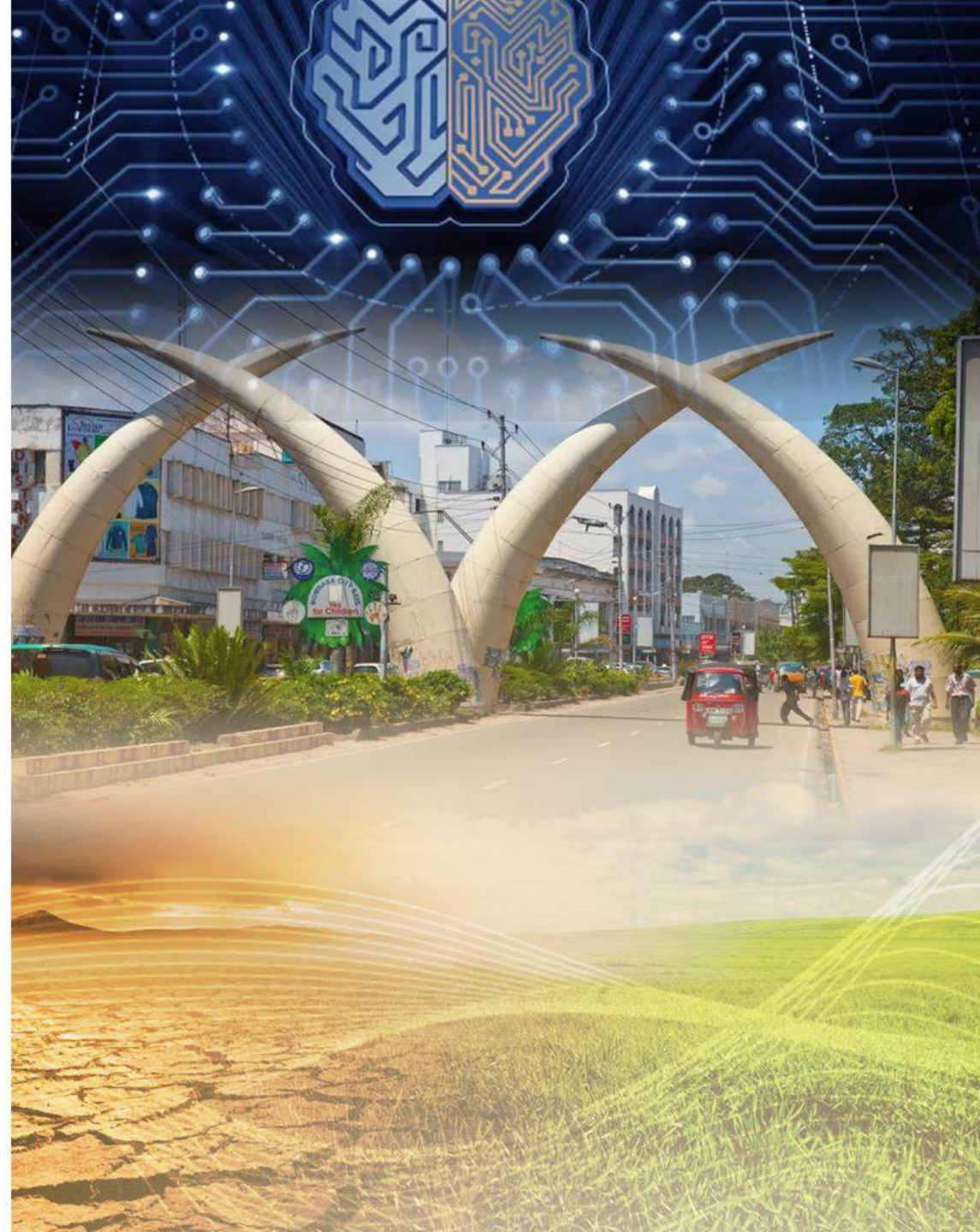
BEYOND EMERGING RISKS:
**INNOVATING RESILIENCE AND
ADAPTATION**



13th to 15th Nov || Mombasa, Kenya



Masterclass in AI & Machine Learning



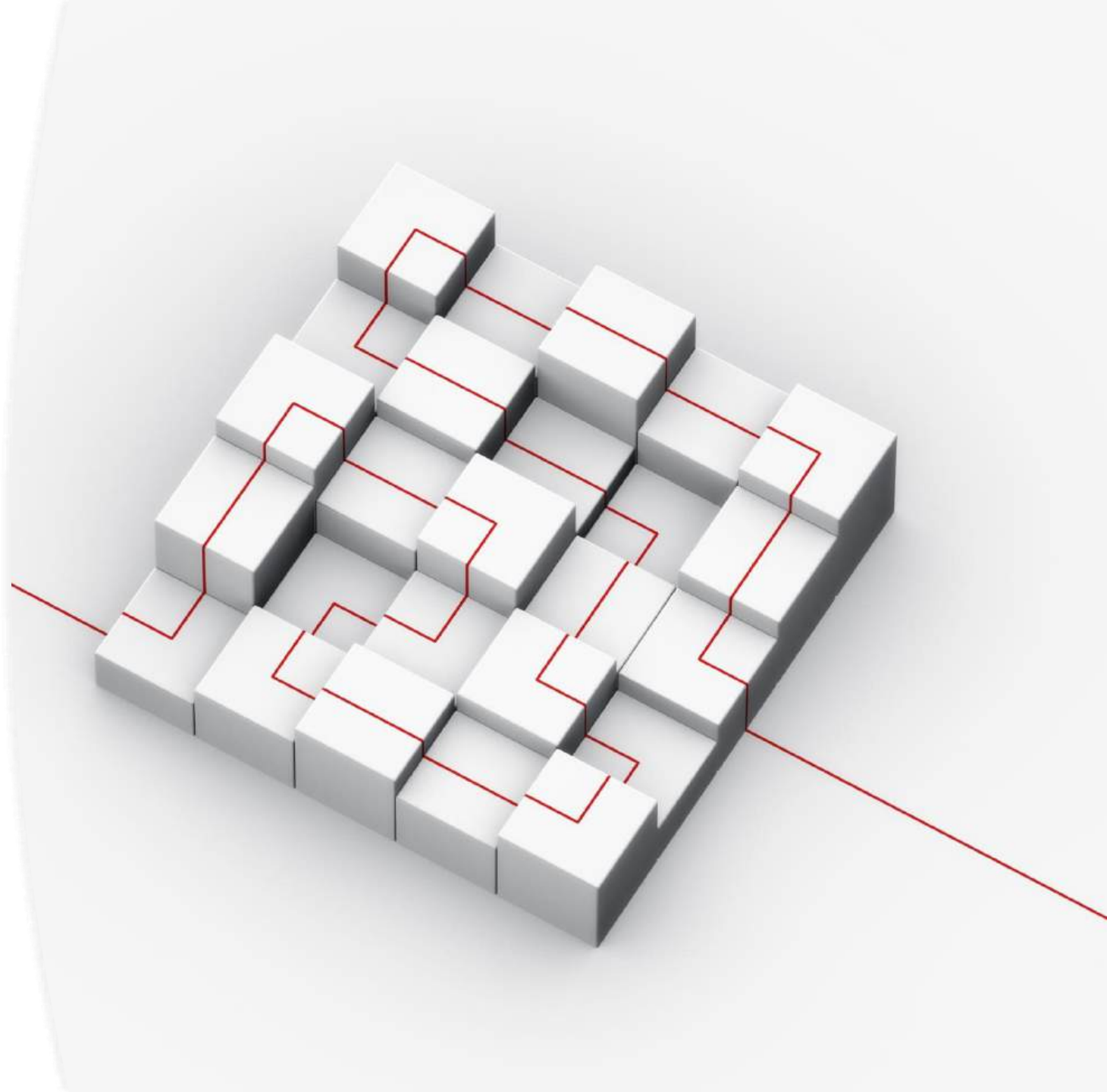
Introduction to AI and Machine Learning for Actuaries

- ***Setting the Stage for AI-Driven Transformation in Actuarial Science***
 - **Ayisi Makatiani, Shikoli Makatiani, Founders CVPAI**
 - **Lucy Nondi, Actuary Jubilee Health Insurance**
 - **Sharon Nderi, Product Specialist, CVPAI**



Session Objectives

- Build a foundational understanding of AI and Machine Learning.
- Explore the potential benefits of AI specifically for actuarial work.
- Set the stage for Session 2, where we'll see practical applications with Sera.



Audience Poll: How Familiar Are You with AI in Actuarial Work?"

Options:

- 1 – Not familiar at all
- 2 – Somewhat aware but no direct experience
- 3 – Familiar, with some understanding of applications
- 4 – Very familiar, having used AI tools or studied AI applications
- 5 – Expert level, actively using AI or developing AI solutions

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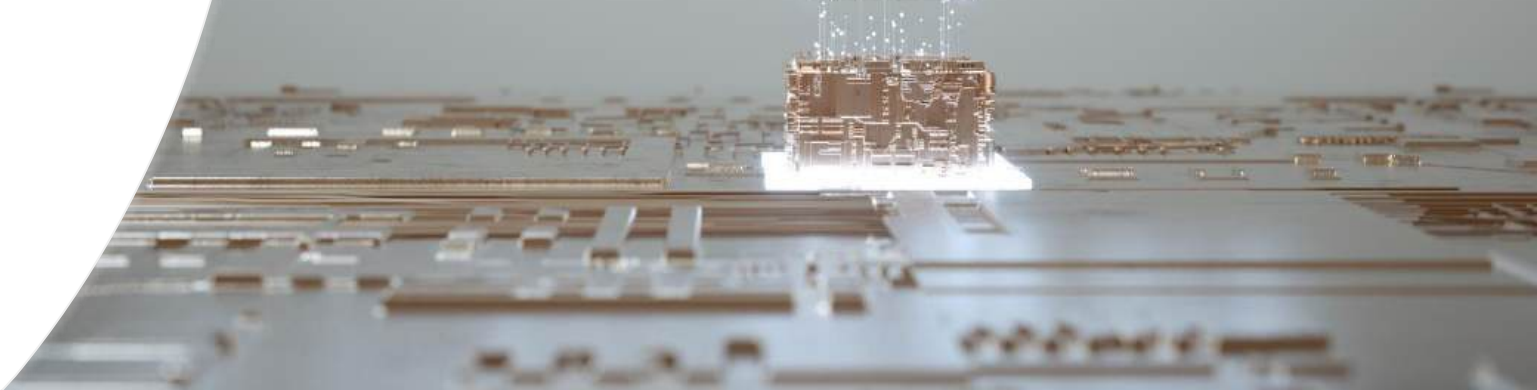
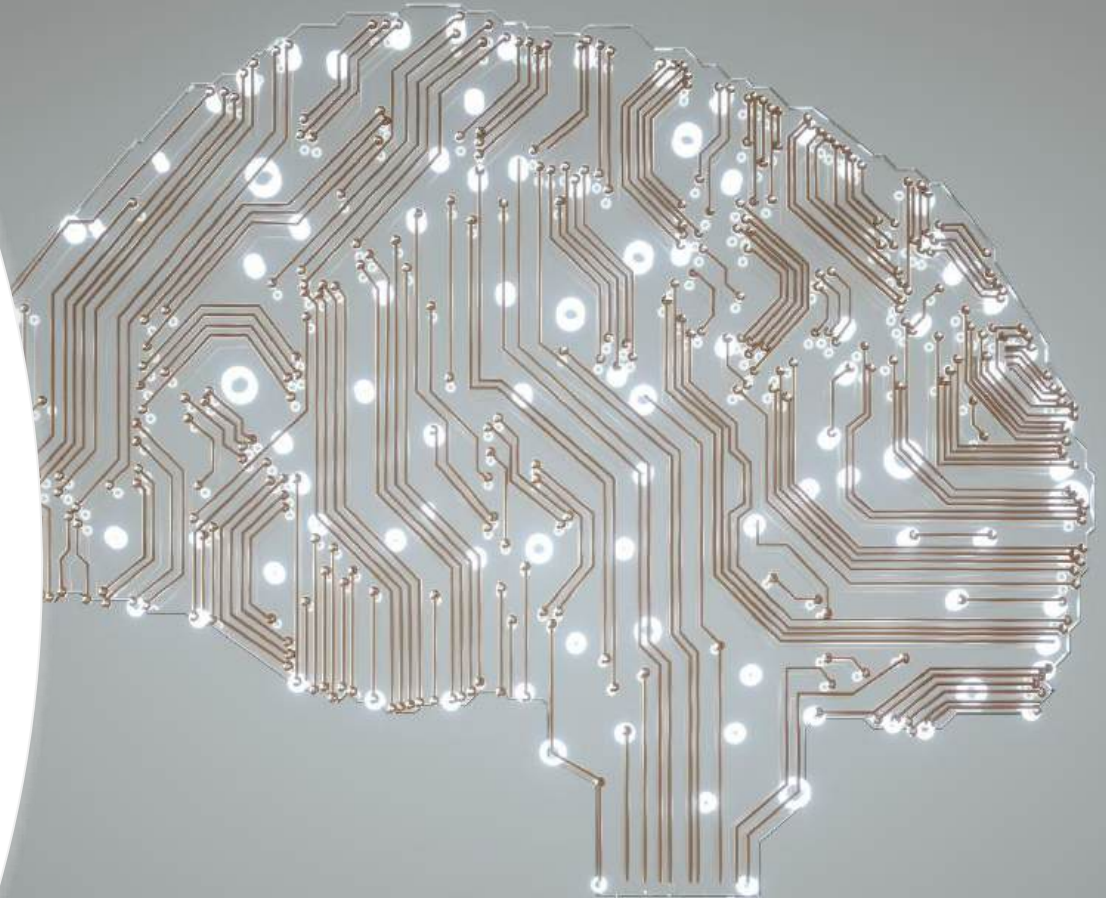
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Understanding AI and Machine Learning

- **Artificial Intelligence (AI):** Simulation of human intelligence by machines.
- **Machine Learning (ML):** AI subset focused on data-driven learning without explicit programming.
- **Relevance to Actuarial Work:** Capable of enhancing data analysis, predictive modeling, and risk assessment.



Why AI Matters for Actuaries



Efficiency Gains: Automate repetitive tasks and streamline workflows.



Improved Accuracy: Reduce human errors in data processing and calculations.



Data-Driven Insights: Support complex decision-making with predictive analytics.

AI in Actuarial Workflows: Automation and Augmentation

Automation: Handle routine, repetitive tasks like data entry, extraction, and report generation.

Augmentation: Enhance actuaries' decision-making with data analysis and predictive modeling support.

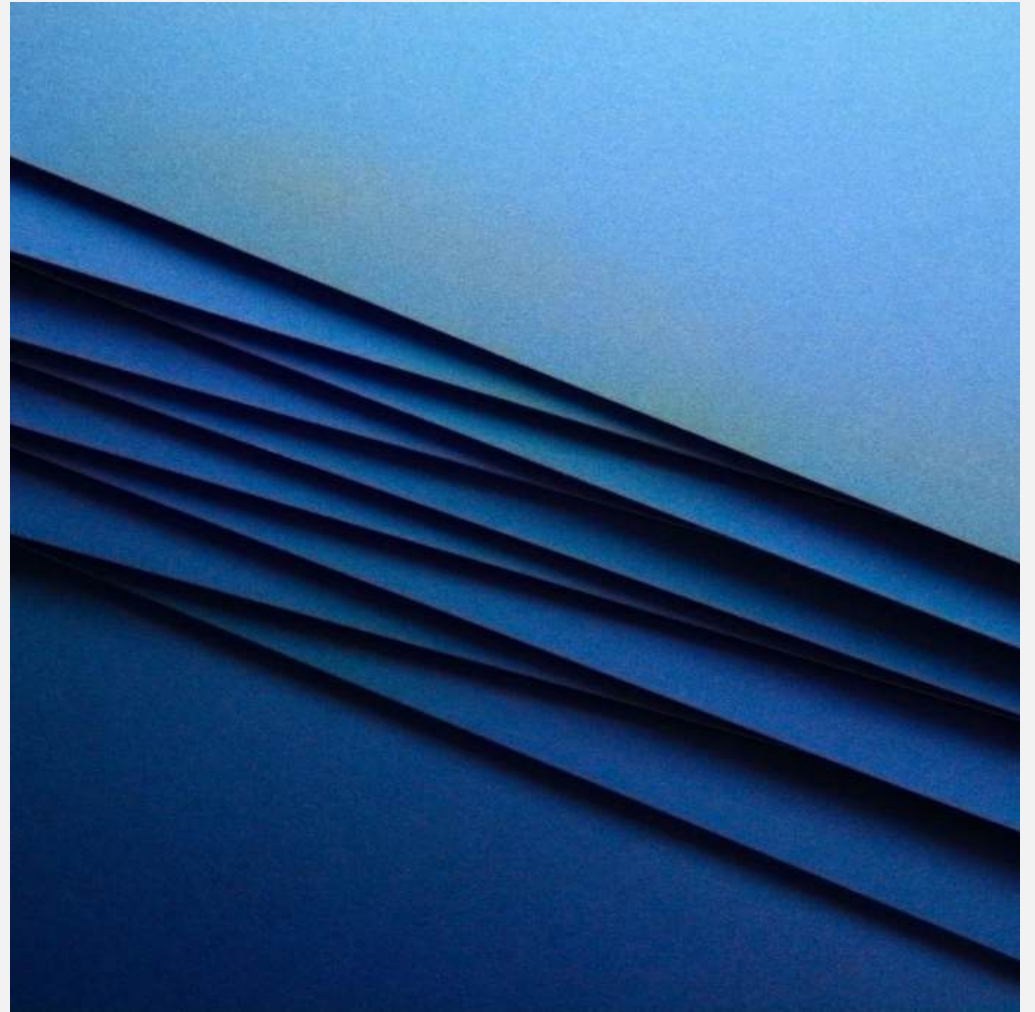
Outcome: Free up time for strategic tasks, enabling actuaries to focus on insights and high-impact analysis.

Key AI Capabilities for Actuarial Work

Data Extraction & Processing: Quickly organize and structure unstructured data from various sources.

Predictive Analytics: Forecast trends, claims frequencies, and risk factors.

Natural Language Processing (NLP): Interpret and analyze textual data, supporting document analysis and customer interactions.





Real-World Applications of AI in Insurance

- **Claims Automation:** Process claims faster with AI-driven validation and fraud detection.
- **Customer Service:** Use AI chatbots and virtual assistants to provide real-time responses.
- **Risk Assessment:** Analyze historical data to categorize risk profiles accurately.

Case Study: State Farm Insurance: Industry Leader and Innovator



Company Background:

- **Largest P&C Insurer in the U.S.**
- **Market Share:**
 - **Auto Insurance:** 9% of U.S. market (KES4T)
 - **Home Insurance:** 16% of U.S. market (KES3T)
- **Product Range:** Auto, Home, Life, Health, and Banking Services

Industry Leadership:

- **Innovation-Driven:** Known for prioritizing customer-centric technology.
- **Benchmark for Digital Transformation:** Leading in revenue, customer satisfaction, and digital adoption.

AI-Powered Data Processing at State Farm Insurance

Before: State Farm faced lengthy data processing times, with high manual entry and error rates.

After with AI: Implemented AI-driven data extraction tools to automate entry, reduce errors, and speed up processing.



State Farm's AI-Driven Risk Assessment

Challenge: Manual risk categorization was time-intensive and sometimes inconsistent.

AI Solution: AI models provided real-time risk categorization, helping State Farm identify high-risk profiles faster and with greater precision.



Predictive Modeling and Future Claims Management

Objective: Use AI for predictive insights on claims frequency and trends.

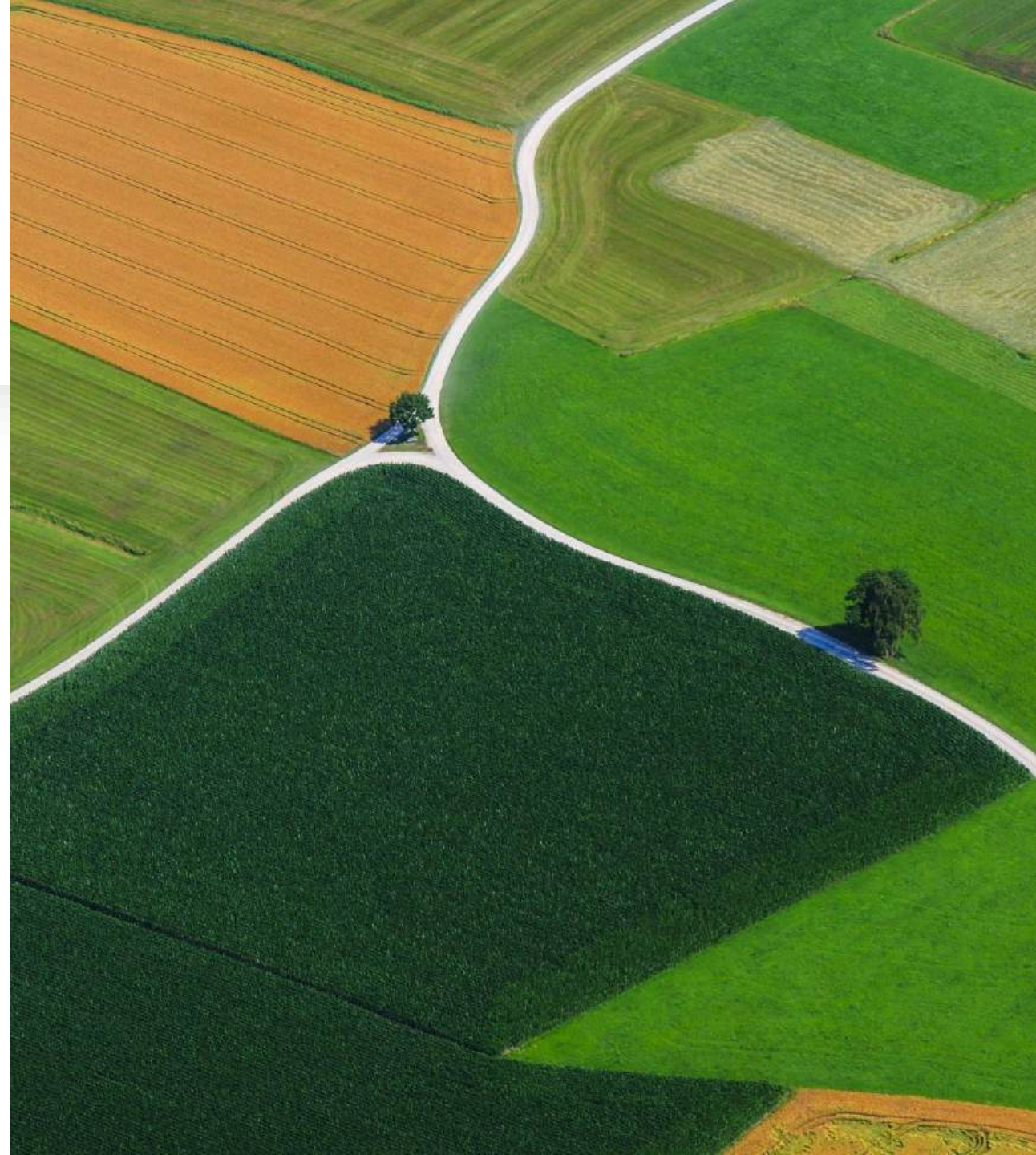
Outcome: AI-enabled forecasting helped State Farm anticipate claim spikes, leading to proactive risk management strategies.



On-Demand Reporting at State Farm

Challenge: Time lag in report generation impacted decision speed.

AI Solution: Instant data retrieval and customized reporting enabled by AI for real-time insights.



Results of AI Integration at State Farm

Outcome Metrics: 40% reduction in data processing time, enhanced risk assessment precision, and faster reporting times. 30% reduction call wait times. Via AI Chatbots.

ROI: Significant operational savings, improved accuracy, and strengthened customer satisfaction.



Key Benefits of AI for Actuarial Workflows

- **Time Savings:** Reduce manual data handling and repetitive tasks.
- **Increased Accuracy:** Minimize human errors, especially in data processing.
- **Scalability:** Handle larger data volumes with consistent results.
- **Enhanced Insights:** Use predictive analytics for proactive decision-making.



Reflection: Where Could AI Add Value in Your Work?

- **Options:**

- Claims processing
- Risk assessment
- Data analysis
- Customer engagement

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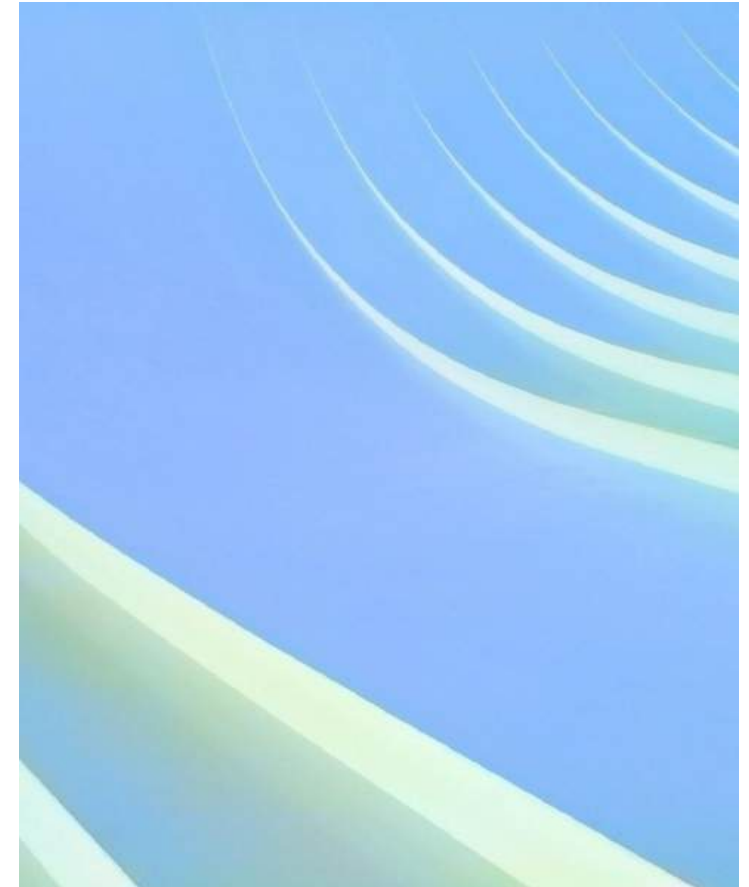
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Essential Skills for Actuaries in the Age of AI

Data Literacy	Understanding and interpreting data is crucial for leveraging AI tools effectively.
Analytical Thinking	Critical thinking skills help actuaries evaluate AI-generated insights and make informed decisions.
Cross-Functional Collaboration	Working effectively with data scientists and technology teams ensures that AI solutions are tailored to actuarial needs.
Adaptability and Continuous Learning	Embracing new technologies and methodologies is essential as the field evolves with AI advancements.



Getting Your Team AI-Ready

Invest in

Invest in Training and Skill Development

- Provide resources to build data literacy and analytical skills within the team.

Encourage

Encourage Cross-Functional Collaboration

- Foster partnerships between actuarial, data science, and IT teams to align on AI goals.

Start

Start Small with Pilot Projects

- Begin with manageable AI projects, such as automating data entry or initial claims assessments.

Build

Build a Culture of Continuous Improvement

- Promote an adaptable mindset, where the team regularly assesses and optimizes AI tools and processes.

Introducing Sera – The Actuarial AI Assistant

- **Role:** Designed to enhance actuarial tasks like data processing, risk assessment, and reporting.
- **Capabilities:** Supports actuaries by automating repetitive tasks, providing real-time data insights, and facilitating decision-making.
- **Goal:** Free up time for actuaries to focus on complex analyses and strategic tasks.



Key Features of Sera for Actuarial Efficiency

- **Data Extraction and Organization:** Automated handling of unstructured data.
- **Predictive Analytics:** Real-time forecasting and trend analysis.
- **Customizable Reporting:** Generate tailored reports quickly based on specific queries.






Closing Thoughts and Next Steps

- **Recap:** Review key takeaways on AI's role in actuarial workflows.
- **Looking Forward:** Discuss the roadmap for AI adoption in actuarial practices.
- **Next Session:** Transition to Session 2 for a live demo of Sera.



Q &A

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