9th Webinar in Risk Management
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AI in Risk and Risk in AI

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It’s all around us…

AI Can **Listen**

AI Can **Generate**

AI Can **Recommend**

AI Can **See**

AI Can **Code**

AI Can **Talk**

AI Can **Plan**

AI Can **Recognize**

AI Can **Design**

AI Can **Chat ‘Intelligently’**

AI Can **Drive**

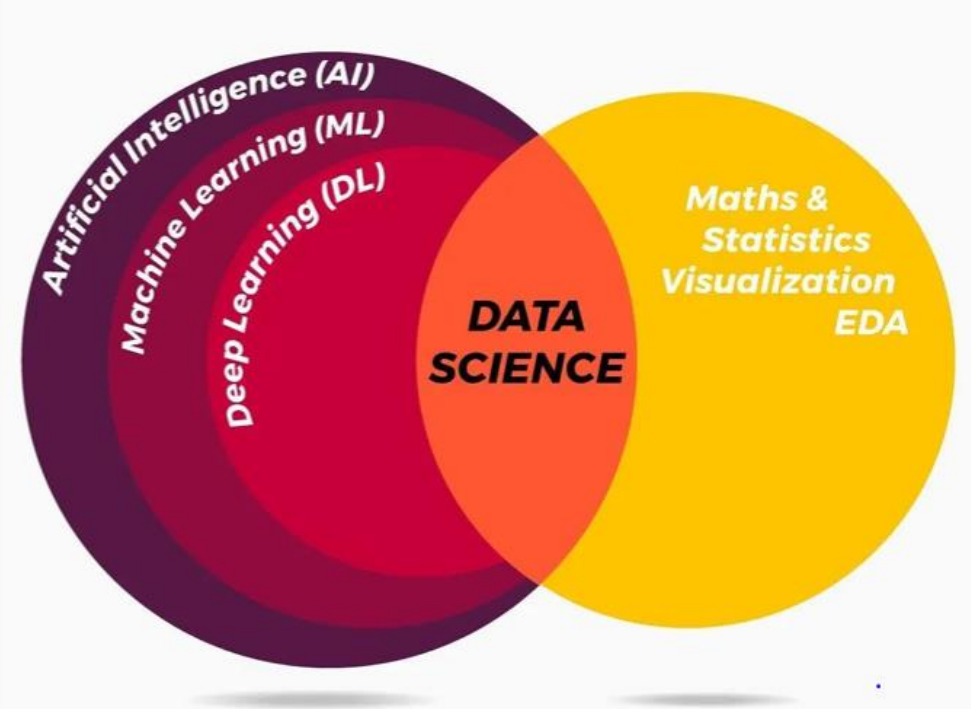
AI Can **Summarise**

AI Can **Understand**

AI Can **Diagnose**

What really is AI?

- **Artificial Intelligence** seeks to *simulate human intelligence and capabilities* like reading, writing, vision, speech etc.
- **Machine Learning** seeks to build *algorithms* that *learn from data* and generalize to *make predictions, recommendations* etc.
- **Deep Learning** is a sub-set of Machine Learning that teaches system to process data in way that is inspired by the human brain. It is instrumental in performing AI tasks.



Industry 4.0 – The Intelligence Revolution
How did we get here?

- **Advances in Computing Power & Cloud Infrastructure:** Affordable cloud infrastructure and high-performance computing made it possible to process complex models and large datasets in real time
- **Connectivity & Integration of Systems:** IoT, APIs, and interconnected platforms enabled end-to-end visibility and intelligent coordination across systems, processes, and industries
- **Breakthroughs in AI & Machine Learning:** Language and Image Recognition Capabilities improved rapidly and were made **accessible**
- **Digitization of Data at Scale**: Physical processes, machines, and transactions became digital, creating massive volumes of structured and unstructured data that could finally be analyzed

AI is advancing at an exponential pace, rapidly turning theoretical concepts into powerful, real-world applications

The AI Trajectory

Evolving Use-Cases

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Pre 2010
Rule Based and Deterministic Systems

Hard coded rules, If-then logic, Manuals

2010-2018
Statistical and Machine Learning Models

Logistic Regression, Fraud Modelling, Lapse/Persistency Models

2018-2022
Advanced ML and Deep Learning

Handing unstructured data, Multivariate models, Text/Voice/Speech analytics

2022-Present
Generative AI and Foundation Models

Language, Reasoning, Summarization Copilots

Emerging
Agentic and Autonomous AI

AI agents that can take actions, learn, coordinate with other systems

“AI in Risk”

Market Risk	Credit Risk	Underwriting Risk	Operational Risk
• Interest rate • Equity • Property • Currency • Spread/concentration risk	• Investment Defaults • Counterparty risk	• Mortality, morbidity, longevity risk • Claims frequency and severity • Catastrophe risk • Lapse/persistency risk • Expense risk	• People/Process failures • System outages • Cyber risk • Fraud • Model risk • Legal/compliance failures
✓ Market trend detection and forecasting ✓ Simulate scenarios ✓ Stress testing using AI-generated scenarios ✓ Automated Portfolio Monitoring	✓ Assessment and rating of companies ✓ Early warning signals for downgrade/default ✓ Analysing alternate data sources	✓ Early identification of emerging or latent risks ✓ Detection of non-obvious correlations ✓ Include large, complex, real-time datasets ✓ Reduced subjectivity and inconsistency	✓ Fraud detection ✓ Process automation (claims triage, document handling) ✓ Predicting system failures ✓ Cybersecurity threat detection ✓ Model performance monitoring, drift detection ✓ Automated compliance checks

Use-Cases in UW and Claims

UW and claims management is complex and resource intensive for some lines of business and countries

Complex product definitions

Complex product definitions (TPD / DI) and many legacy series of definition exasperated the complexity in claims management process.

Resource intensive

Huge resource required: large insurers require 500 – 800 claims managers. Others could be up to 200 (and need to hire more)

Manual processing

A lot of manual processing involved which:
- is time consuming
- error prone (leakage)
- can lead to frustrating delays in claim payment.

Increased pressure to improve

Insurers are under increased pressure to improve the turnaround times, more responsive to claims assessment etc

AI-based assistants aims to address some of these challenges

AI Augmented UW

Dynamic Medical Questions that can adapt in real-time, branch intelligently, Integration with medical assessment tools and guidelines, offering differentiated medical questions.

30-35% increase in STP

Gen-AI based Claims Assistant

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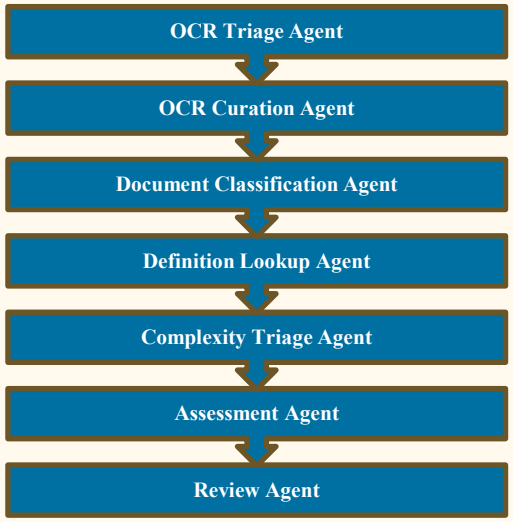
Inputs

- Application forms
- Medical reports
- Claims reports
- Claim event definitions

Engine

Agentic AI workflow powered by OCR, LLM



Assessment

GenAI / LLM generates the following outputs:

- A structured summary of a claim - key features, names of claimants, DoB etc…
- A comparison and assessment of the medical evidence and reports against the provided claim definitions
- Check for further requirements
- Highlight suspicious or contradicting information

50% reduction in claim assessment time

Multimodal AI and Fraud Detection

Seeing the Full Picture

Input data includes Structured data, Video/Audio Recordings, Images, Text summaries

Fraud hides in inconsistencies across data sources, not in any single one.

Motor Claims Fraud

Input

- Damage photos (image)
- Claim description (text)
- Repair invoice (document)
- Past claims history (data)

What AI detects

- Image damage inconsistent with repair cost
- Text description conflicting with visual evidence
- Repeated repair vendors across unrelated claims

Identity Fraud

Input

- KYC documents(image/PDF)
- Proposal form
- Metadata and submission patterns

What AI detects

- Altered documents
- Re-used templates across applicants
- Mismatch between declared and document information

Sample Case
Formatted Date of Birth on Adhaar Card

t of India

Birth : 01/01/1968

Compliance Monitoring

Automating the review of documents and regulatory updates, alerting teams to potential non-compliance issues

Continuous Surveillance than Periodic Reviews

AI can enable continuous monitoring of communications, databases, processes and flag breaches in real-time

Policy nd Regulation Interpretation

Read regulatory circulars, guidelines, and policies
Extract obligations and thresholds

Communication Monitoring

Using NLP and speech analytics, AI can detect mis-selling language, identify disclosures

Regulatory Reporting and Alerts

AI can generate early alerts on potential breaches in claim settlement timelines, dispute resolution.
Create audit trails and track documentation completeness

AI in Research and Drug Discovery

Google DeepMind AlphaFold (2020)

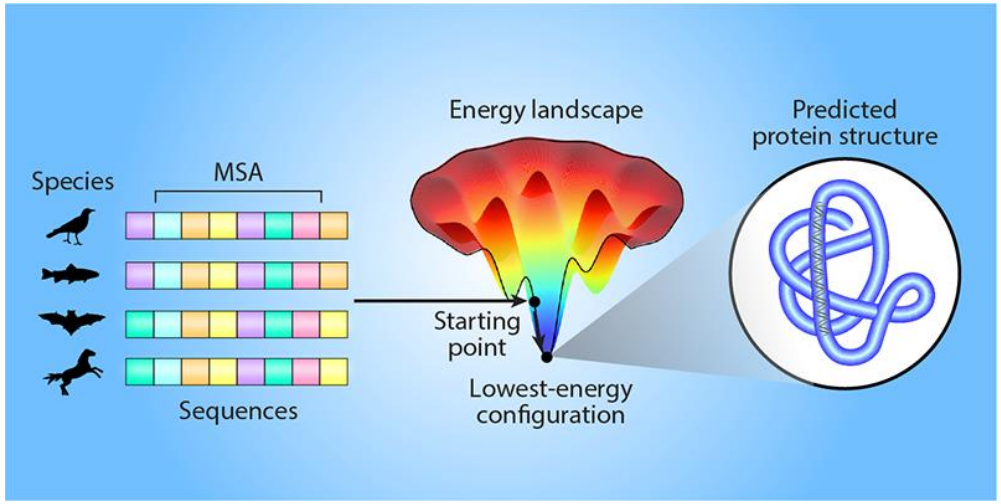
AlphaFold is an AI system developed by Google DeepMind that predicts a protein's 3D structure from its amino acid sequence

Biggest biological breakthrough in 50 years

It regularly achieves accuracy competitive with experiment

AlphaFold has immediate potential to help understand the structure of proteins and advance biological research

Powerful AI could at least 10x the rate of these discoveries, giving us the **next 50-100 years of biological progress in 5-10 years**



AI is changing the inherent nature of risks and also adding a new layer of risk…

“Risk in AI”

- AI can deceive
- AI can hallucinate
- Algorithm Bias
- Regulatory risk – Emerging guidelines, not prescriptive
- Increased climate and cyber risk

“Risk in AI”

Cyber cover rush gathers pace as digital risks mount

Source Credit: Shilpy Sinha, The Economic Times

Mumbai: India is witnessing a sharp increase in companies purchasing cyber insurance and expanding cover sizes, as boards and management reassess digital risks following high-profile global outages, like the one involving Jaguar Land Rover, and tighter data protection rules.

The risk of artificial intelligence-powered attacks and data privacy violations has led to a pickup in policy sales, according to industry executives, with risks such as deepfake-enabled fraud, automated ransomware and data misuse leading to specialised coverage.

AI Governance - Traditional Model Governance Is No Longer Enough

- Traditional Models Are Largely Static. AI Is Not
- Model Performance ≠ Decision Quality
- Explainability Is No Longer Optional
- Feedback Loops Can Amplify Risk
- Accountability Becomes Blurred
- Human Behavior Changes the Risk Profile

Responsible AI Framework

RAISEF Three Pillars

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What role can Actuaries play?

- Actuaries bring expertise in risk assessment
- Model validation culture
- Prudence and conservatism
- Long-term consequences mindset

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Thank you for your attention!