Strategies for Success: AI Powered Data Analytics for RMIS and Claims

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The Role of AI in RMIS and Claims Management

- Overview of AI Technologies

- The evolution of AI in risk management and claims processing

- Current Challenges in RMIS and Claims Management

- How AI can power RMIS and claims management solutions for data-driven decision-making?

Overview of AI Technologies
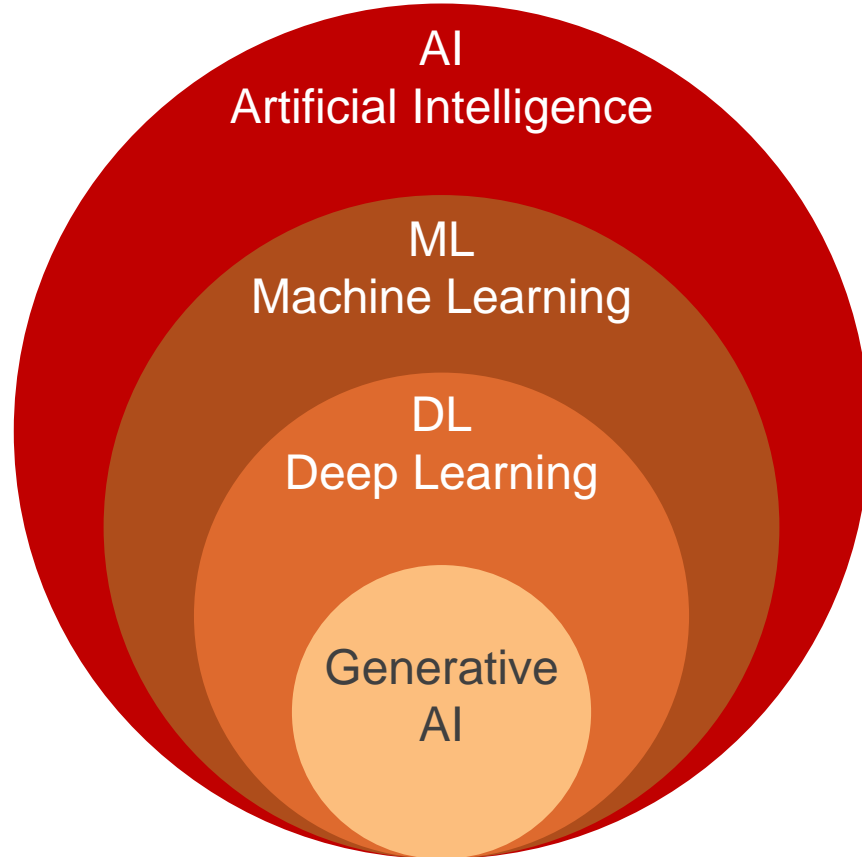
- Artificial Intelligence

- A branch of computer science dealing with the simulation of intelligent behavior in computers.

- AI is defined as the capability of a machine to imitate intelligent human behavior.

- Examples:
  - visual perception
  - speech recognition
  - decision-making
  - language translation

The evolution of AI in risk management and claims processing

Early Automation and Rule-Based Systems (1980s-2000s)	Introduction of Models (2000s-2010s)	Machine Learning and Advanced AI Applications (2010s-Present)	Predictive Analytics and Prescriptive AI (2020s-Beyond)	Real-Time AI and Continuous Learning Systems (Emerging)

Rule-Based Systems: The first AI applications in risk management and claims processing were largely rule-based systems. These systems followed predefined rules and logic to automate routine tasks like policy administration, claims routing, and basic fraud detection.

Predictive Analytics: As data availability increased, insurers began using predictive models to assess risks, forecast claims costs, and improve underwriting decisions. For example, actuarial models based on historical data became more accurate and started to incorporate variables that could better predict outcomes.

AI-Driven Claims Automation: The introduction of machine learning allowed insurers to automate more complex tasks such as claims processing, underwriting, and fraud detection. AI algorithms could process data faster than humans, identify anomalies, and predict which claims were more likely to result in litigation or escalation.

Predictive Analytics Matures: Modern predictive models incorporate real-time data from IoT devices, weather reports, and other external sources to assess risks dynamically.

Prescriptive Analytics: AI now provides prescriptive analytics, recommending actions to mitigate risks or optimize claims outcomes.
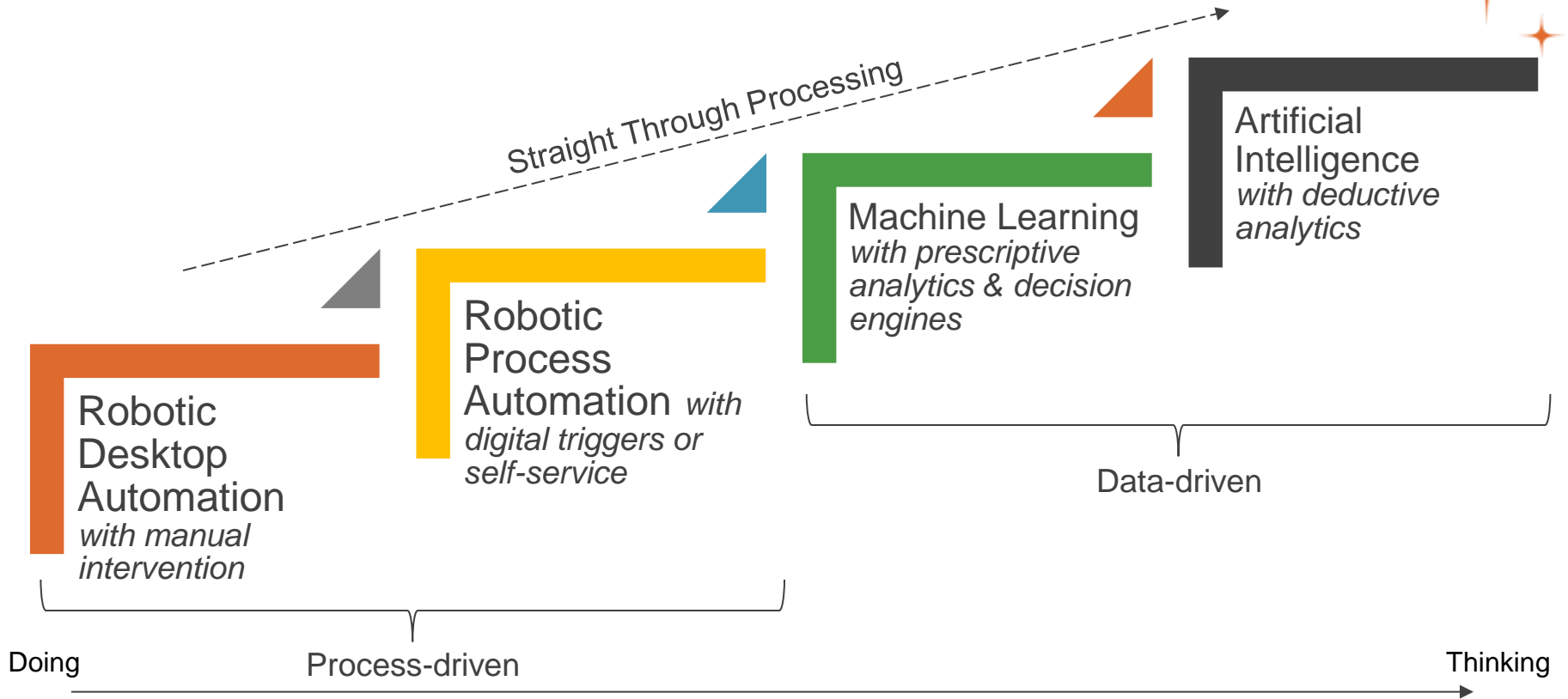
Real-Time Risk Monitoring: AI systems can monitor risks in real-time

Continuous Learning: Modern AI systems are moving beyond static models. Continuous learning systems adapt to new data without requiring retraining from scratch.

Automation & AI Continuum

Straight Through Processing

Robotic Desktop Automation *with manual intervention*

Robotic Process Automation *with digital triggers or self-service*

Machine Learning *with prescriptive analytics & decision engines*

Artificial Intelligence *with deductive analytics*

Doing

Process-driven

Data-driven

Thinking

Current Challenges in RMIS and Claims Management

- Data silos and integration issues

- Inefficient manual processes

- Vast amounts of unstructured data

- Difficulty in Predicting and Mitigating Emerging Risks

- Compliance and Regulatory Challenges

- Lack of Real-Time Analytics and Reporting

AI Powered Data Analytics in Practice

- Predictive Analytics & Machine Learning

- LLMs & Generative AI

- Data Mining and Trend Analysis

Predictive Analytics & Machine Learning

- Who has been "Predictive Analytics" to death over the last 10 years?

- Who has seen something like a 'Severity Risk' predictive analytic score in relation to claims? This is a score to identify the probability a claim will be among the top % in incurred value

- Who has then looked at a claim that was flagged by this predictive model, and realized that any adjuster with a year in the business could have recognized that this is likely to get ugly?

Predictive Analytics & Machine Learning

- What's made this growth in predictive models and analytics over the last 10 years possible? **Machine Learning**

- Generalized Linear Models were the tools historically used by actuaries to develop rates

  - o **Identify Rating Factors**: Age, Marital Status, Zip Code

  - o **Build a Rating Model**: Predictors, Target Variables, Distribution

  - o **Apply Statistical Tools**: Regression Analysis using R

Predictive Analytics & Machine Learning

"Training a linear logistic regression model used to be a nontrivial homework problem, worthy to give to new machine learning Ph.D. students at Carnegie Mellon University in 2014. By now, this task can be accomplished with under 10 lines of code, putting it firmly within the reach of any programmer."

(Dive into Deep Learning)

Predictive Analytics & Machine Learning

- Provider Scoring
  - Interesting, but we all kind of already know the Dr. Feelgoods in our area
  - Maybe it's relevant - from a legal perspective, could the fact that certain doctors have significantly worse outcomes be relevant / useful?

- Attorney Scoring
  - This is a more interesting problem - evaluating attorneys is hard
  - We actually have a product around this called LAMBDA. We look at cost adjusted claim outcomes based on Attorney Selection, moving the focus away from the hourly rate to total cost and quality of outcomes.

Predictive Analytics & Machine Learning

- **Adjuster Scoring**
    - This is a really interesting problem
    - Sort adjusters into quartiles by outcome. On a WC lost time desk, the difference between a top and bottom quartile adjuster would likely be in excess of $100,000 / year.

2024 Konnect

Session starts in

01 d **15** h **39** m **01** s

Vote at **pigeonhole.at/24KONNECT36**

2024 Konnect

Show QR code | Chart Type ^ | Screens ^

LLMs & Generative AI

GPT 3

- o Tokens: 4K In / 4K Out
- o Fun toy, quick notes, simple questions
- o A high schooler with a vivid imagination

GPT 3.5

- o Tokens: 4K - 16K In / 4K Out
- o A college graduate with an incredibly broad body of knowledge and the ability to reason logically

GPT 4 / 4o

- o Tokens: 8K - 128K In / 4K-8K Out
- o Added the ability to use voice & visual inputs, data analysis

GPT o1

- o Tokens: 128K In / 32K-64K Out
- o A post-graduate with an incredibly broad body of knowledge and the ability to reason logically

Operationalizing Machine Learning & AI

- How do we avoid the fate of predictive analytics?

- Two kinds of problems:
  - Big question & lots of data: Traditional ML
  - A lot of small questions: LLMs + Automation

Operationalizing Machine Learning & AI

- **Traditional ML** - Anti-Fraud in 2-Sided Marketplace
  - 500,000 Claims / Year
  - Average Claim < $1,000
  - Typical Fraud Vector: Collusion
  - Average Fraudulent Claim - $500

Operationalizing Machine Learning & AI

- **LLMs + Automation** - Automating repetitive low complexity Tasks
  - o List to List Lookups
  - o Document Data Extraction
  - o Claim Triage
  - o Claim Audits

Operationalizing Machine Learning & AI

- LLM Demos
    - Claim Coding
    - Document Data Extraction
    - Claim Triage / Bat Phone

Body_Parts_to_Ma

Body Part
Elbow
Neck
Head
Back
L Arm
L Small Finger
Right Shoulder
Both Legs
Clavicle
Tooth
Eye
Brain
Lower Back
Traumatic Brain Injury
Lumbar Spine
Cervical Spine

Body_Part

Code	Description	Source
10	Head, unspecified	OIICS
11	Cranial region, including skull	OIICS
12	Ear(s)	OIICS
13	Face	OIICS
18	Multiple head locations	OIICS
19	Head, n.e.c.	OIICS
20	Neck, except internal location of diseases or disorders	OIICS
21	Internal neck location, unspecified	OIICS
22	Vocal cord(s)	OIICS
23	Larynx	OIICS
24	Laryngopharynx	OIICS
25	Pharynx	OIICS
26	Trachea	OIICS
28	Multiple internal neck locations	OIICS
29	Internal neck location, n.e.c.	OIICS
30	Trunk, unspecified	OIICS
31	Chest, including ribs, internal organs	OIICS
32	Back, including spine, spinal cord	OIICS

AXIS

DECLARATIONS

NOTICE:

THIS IS A SURPLUS LINES POLICY AND IS NOT PROTECTED BY THE CONNECTICUT INSURANCE GUARANTY ASSOCIATION OR SUBJECT TO APPROVAL BY THE CONNECTICUT INSURANCE DEPARTMENT. IT IS IMPORTANT THAT YOU READ AND UNDERSTAND THIS POLICY.

NAMED INSURED	ACME Beverage Company 1776 Wallaby Way Boston, MA 05743
BROKER OF RECORD	Aon Risk Services Northeast, Inc. [New York] 165 Broadway, Suite 3201 New York, NY 10006

INSURER	AXIS Surplus Insurance Company (Non-Admitted) 111 South Wacker Drive, Suite 3500 Chicago, IL 60606 (866) 259-5435 **A Stock Insurer**
POLICY FORM	AXIS CYBER INSURANCE AXIS 1012561 0120
POLICY NUMBER	A-002-000485721-02
POLICY PERIOD	Effective Date: 10/02/2023 Expiration Date: 10/02/2024 *Both dates at 12:01 a.m. standard time at the Named Insured's address stated herein.*

TOTAL POLICY PREMIUM	$899,522.00

TERRORISM PREMIUM FOR CERTIFIED ACTS OF TERRORISM *(Included in Total Policy Premium)*	N/A

NON ADMITTED PAPER:

This policy is written by a surplus lines insurer. As such, the broker is responsible for determination and collection of any applicable surplus lines taxes, related fees, and/or applicable state-imposed surcharges, invoicing the insured, and filing in accordance with the applicable state's surplus lines laws and/or regulations.

POLICY INFORMATION	
Policy Limit of Insurance	$5,000,000 Aggregate
First Inception Date	10/02/2022

EVEREST PEAK PROTECT
COMMERCIAL UMBRELLA LIABILITY POLICY
(With Crisis Event Protection Coverage)

DECLARATIONS

EVEREST NATIONAL INSURANCE COMPANY
A Capital Stock Insurance Company
477 Martinsville Road
P.O. Box 830 Liberty Corner, NJ 07938-0830

PLEASE READ THE ENTIRE POLICY CAREFULLY AND DISCUSS THE COVERAGE HEREUNDER WITH YOUR INSURANCE AGENT OR BROKER.

POLICY NUMBER: GZ7XL00099-111　　　　RENEWAL OF: NEW

ITEM 1.　NAMED INSURED: ACME Beverage Company

　　　　ADDRESS: 1776 Wallaby Way
　　　　　　　　Boston, MA 05743

ITEM 2.　POLICY PERIOD: From: 10/10/2023　　To: 10/10/2024
　　　　(12:01 A.M. LOCAL TIME AT THE ADDRESS OF THE NAMED INSURED SHOWN ABOVE)

ITEM 3.　A. GENERAL AGGREGATE LIMIT: $15,000,000

　　　　B. PRODUCTS-COMPLETED OPERATIONS AGGREGATE LIMIT: $15,000,000

　　　　C. EACH OCCURRENCE/OFFENSE LIMIT: $15,000,000

ITEM 4A.　CRISIS EVENT PROTECTION EXPENSES AGGREGATE LIMIT: $250,000

ITEM 4B.　CRISIS EVENT PROTECTION LOSS AGGREGATE LIMIT: $50,000

ITEM 5.　"SELF-INSURED RETENTION": $25,000　　　per "occurrence"

ITEM 6.　PREMIUM: $705,000

Sample Claim Notes

Claim #	Coverage	Claimant	Date of Loss	Created Date	Claim_Age	Note Date / Time	Category	Author	Text
GL-24-1008	GL	Ethan Wright	10/15/24	10/16/24	2	10/22/24 13:26	Investigation	Jennifer Adams	Received email from insured stating she will get photos of the ramp. Stated we own the garage, there was no maintenance going on in the garage or to the ramp.
GL-24-1008	GL	Ethan Wright	10/15/24	10/16/24	2	10/16/24 15:44	Investigation	Jennifer Adams	Sent email to claimant thanking him for his time this afternoon. Stated as per discussion, we are the insurance carrier for ACME Beverage. Asked to please send over a photo of his Medicare card at his earliest convenience.
GL-24-1008	GL	Ethan Wright	10/15/24	10/16/24	2	10/16/24 15:40	Prompt Contact	Jennifer Adams	Contacted Ethan Wright on 10/16/2024. Took recorded statement? Wife answered, I advised I am looking to speak with Ethan. She asked me to hold on, I could hear her end the call with someone else and then stated Insurance Company was calling. Ethanwas put on the phone. I advised who I was and why I was calling. Confirmed his personal information. They were leaving an appointment in the building, went down the elevator, went to the doors to go out to the parking garage. As he proceeded out the door, his focus was, where is their car so as he was walking out, he took a spill and landed on his head. Stated there was a ramp there and he did not realize it was a ramp. Mentioned how there was no railing to assist down the ramp. He fell off the edge of the ramp although it was not that high and cracked his head on the concrete floor. Stated this was their first time at this location, building was just built last year. The ramp was not painted a different color. He was wearing black loafers, dress like shoes. Had an XRay done. Still awaiting full results. Stated he is not in immediate pain but if they cannot fix his eye vision, he will not be able to drive anymore and that will effect his daily living as he assists with his grandchildren. Asked him the Medicare questions, he answered with no questions. Will send him an email to obtain a copy of Medicare card. His biggest issue is the long term effect. Stated if there would have been a railing on the ramp, this would not have occurred. I explained the claims process, advised that liability is still under investigation. Stated we will keep him updated. Both thanked and ended call.
GL-24-1008	GL	Ethan Wright	10/15/24	10/16/24	2	10/16/24 14:09	Investigation	Jennifer Adams	Sent email to contact Katrina stating the following My name is Nicole Zinda, I am the assigned adjuster for the incident that occurred on October 15th 2024 involving Lee Pearson walking down the ramp when he lost his footing along the edge of the platform and fell falling face first onto the concrete causing injuries to his face. I have received the incident report and video footage from Steven but I am looking to obtain some further information. Photos of the area Do we own the parking garage? If we do not own, is there a lease agreement we can review? Was there any maintenance going on in the parking structure? Any recent maintenance to the ramp?
GL-24-1008	GL	Ethan Wright	10/15/24	10/16/24	2	10/16/24 14:09	Investigation	Jennifer Adams	Received email from Employer with the video footage and incident report
GL-24-1008	GL	Ethan Wright	10/15/24	10/16/24	2	10/16/24 11:06	Investigation	System	View Index Report Date Received: 10/15/2024 Risk Indicator: LOW Characteristic(s) : - New Public Records data found: This data has been searched against the ClaimSearch database
GL-24-1008	GL	Ethan Wright	10/15/24	10/16/24	2	10/16/24 11:01	Investigation	Jennifer Adams	Sent an email to Garage Owner stating to add per the notes in the claim, please provide the video of this incident at your earliest convenience.
GL-24-1008	GL	Ethan Wright	10/15/24	10/16/24	2	10/16/24 10:58	Contact	Jennifer Adams	Contacted A) ACME Beverage on 10/15/2024. Took recorded statement? No I sent an acknowledgement email to SHI contacts. Provided the claim information / my contact information and noted I would be reaching out to the noted contact for more information. Advised they can reach out to me with any questions.
GL-24-1008	GL	Ethan Wright	10/15/24	10/16/24	2	10/16/24 10:53	Liability	Jennifer Adams	Liability Assessment State of Jurisdiction: Massachusetts Negligence Rule: Modified Comparative 51% Statute of Limitations PD: 3 years Statute of Limitation BI: 3 years FOL: Shannon Wright stated that her husband Ethan Wright was walking down the ramp when he lost his footing along the edge of the platform and fell falling face first onto the concrete causing injuries to his face. Liability: Investigation is ongoing on this time.
GL-24-1008	GL	Ethan Wright	10/15/24	10/16/24	2	10/16/24 10:52	Damage	Jennifer Adams	Damage Assessment Per FNOL Shannon Wright stated that her husband Ethan Wright was walking down the ramp when he lost his footing along the edge of the platform and fell falling face first onto the concrete causing injuries to his face. Injuries to face, further investigation is required.
GL-24-1008	GL	Ethan Wright	10/15/24	10/16/24	2	10/16/24 9:07	Supervisor Review	Peterson, Chris	New loss involving a trip and fall in the parking garage. Contact the insured to confirm facts of loss, do we own the parking garage? If we don't do we have a lease agreement we can review? Any maintenance going on in the parking

trueblue ®
THE PEOPLE COMPANY®

Who is TrueBlue:

✓ TrueBlue is a staffing services company serving ~50,000 clients in the US each year by putting ~400,000 people to work. TrueBlue employees work in all states and in all industries.

✓ TrueBlue employees report ~3,000 injury incidents per year.

✓ TrueBlue delivers services via a brick-n-morter branch network and a digital application.

✓ TrueBlue has grown to ~$2B in revenue organically and via acquisition.

✓ TrueBlue is a public company with material work comp reserves of ~200M.

Scope of Challenge:

- Data silos, quality, completeness, and integration issues
- Inefficient manual processes
- Vast amounts of unstructured data
- Difficulty in Predicting and Mitigating Emerging Risks
- Compliance and Regulatory Challenges
- Lack of Real-Time Analytics and Reporting
- Accurtae budgeting and forecasting of claims and insurance expense

➢ We have all of the challenges listed on slide 9 - and more!

➢ We are actively looking to AI and ML to assist our team with the challenges in partnership with our TPA, RMIS partner, and experts like Pat and Peter.

➢ Specific interests include predictive analytics, litigation propensity, fraud propensity, as well as growth propensity. Claim administration is key also but mostly for the TPA.

➢ Underwriting to understand how we are performing by customer, industry, job title, state, etc.

iKonnect 2024

Strategies for Success

- Overcoming Common Challenges

- Future-Proofing Your AI Strategy

- AI Trends

Overcoming Common Challenges
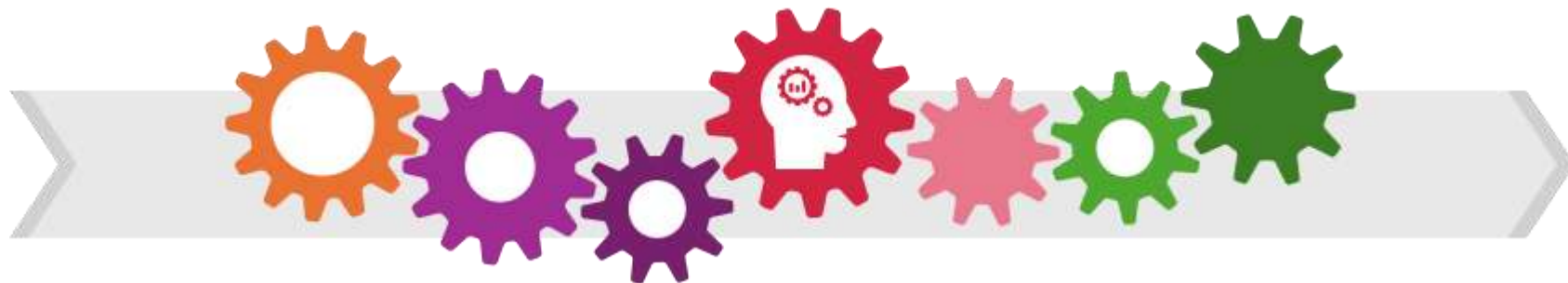
AI algorithms are **complex**.

AI systems are **prone to bias**, as they are often trained on biased data sets.

AI technology is **expensive**.

Companies must be able to **interpret** and act on the data generated by AI systems.

Require significant **training data** to produce accurate results.

Security and privacy - AI systems can be vulnerable to malicious attacks.

Difficult to **implement**.

Konnect

Future Proofing Your AI Strategy

Get smart on AI-related technology and trends **1**

Identify use case and benefits **2**

Determine data and technology requirements **3**

Identify necessary resources **4**

Create a flexible roadmap **5**

AI Trends

- Real-Time Data Processing and Analytics

- Integration of Internet of Things (IoT)

- Natural Language Processing and Generative AI

- Robotic Process Automation (RPA) Combined with AI

- AI-as-a-Service

RISK UNDER ONE ROOF

CONNECT WITH ME.

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