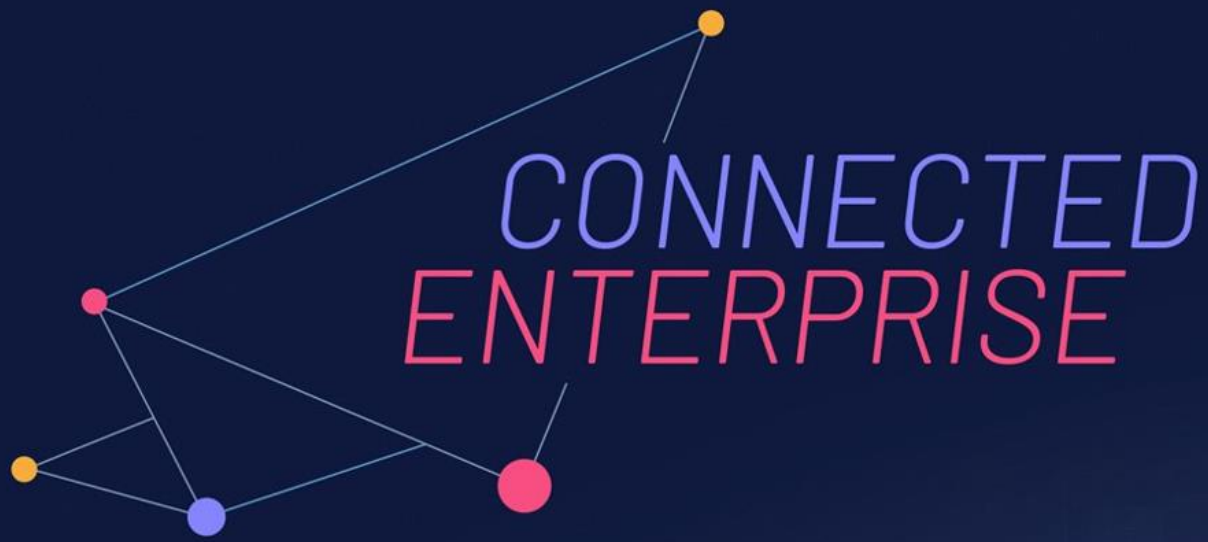
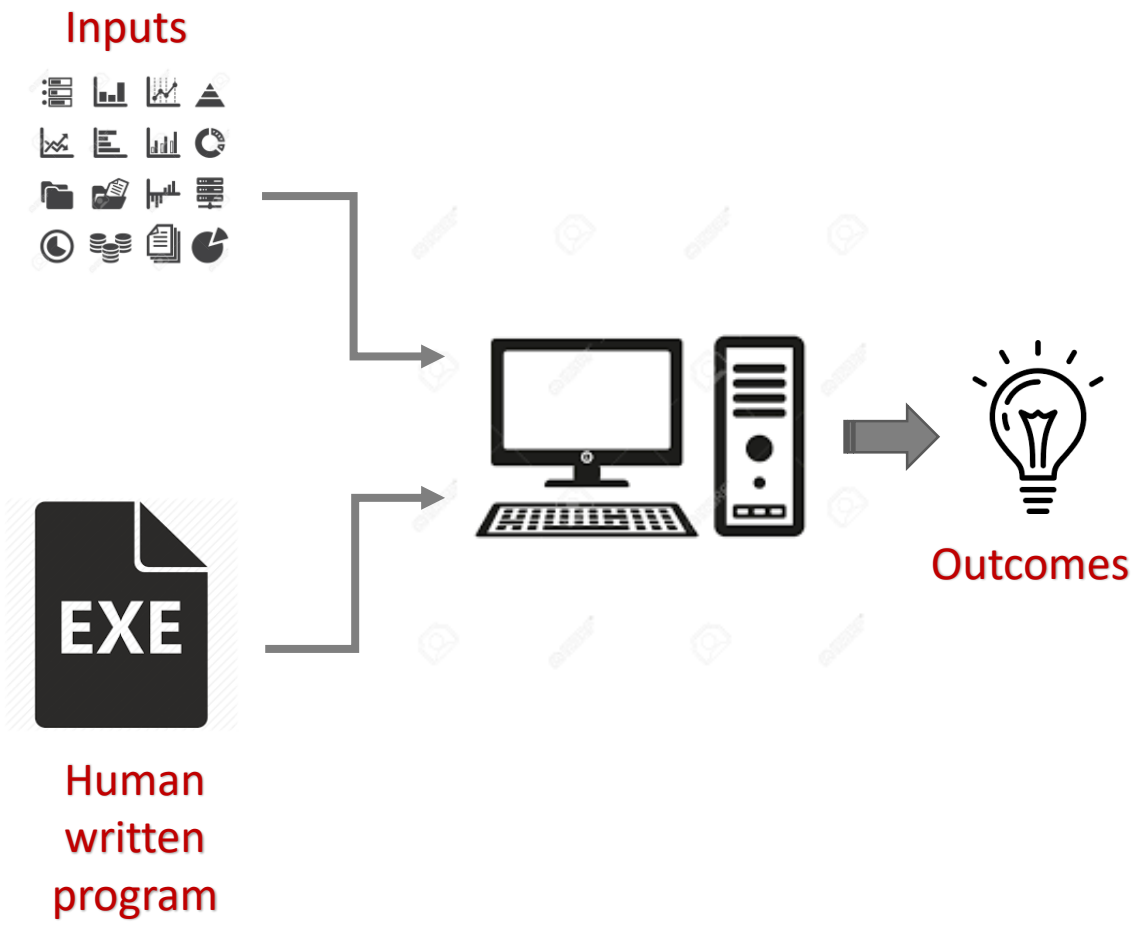
nagarro
THINKING BREAKTHROUGHS

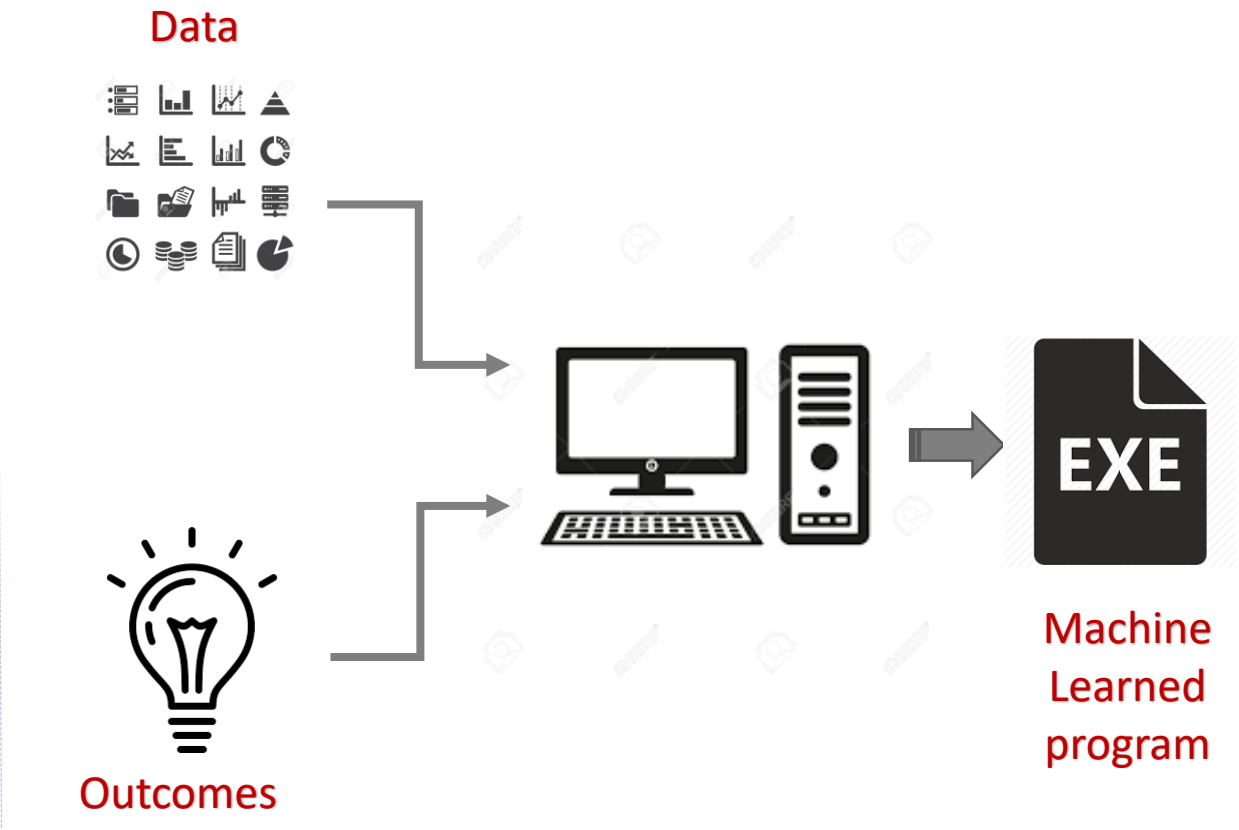
AI/ML USE CASES

a strategy for the connected enterprise



AI changes the very way software is developed !





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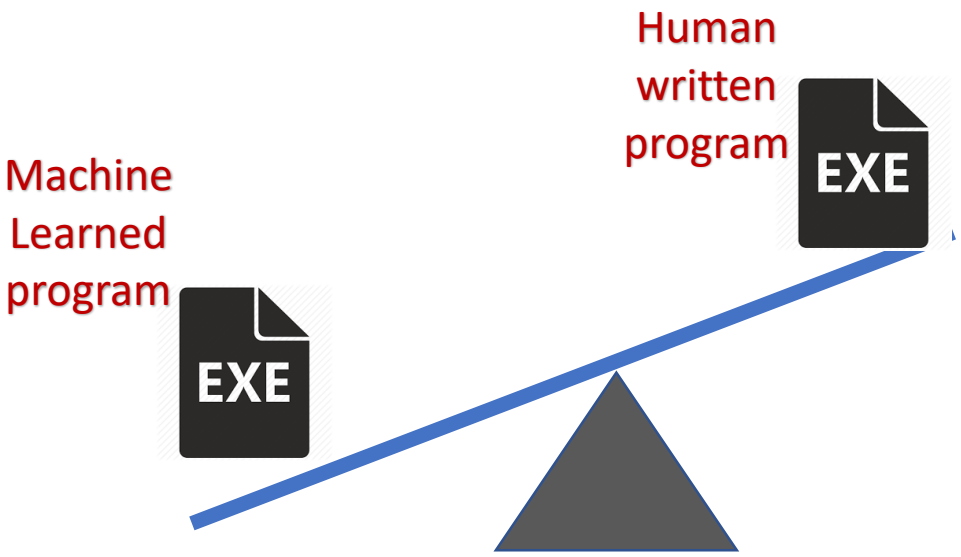
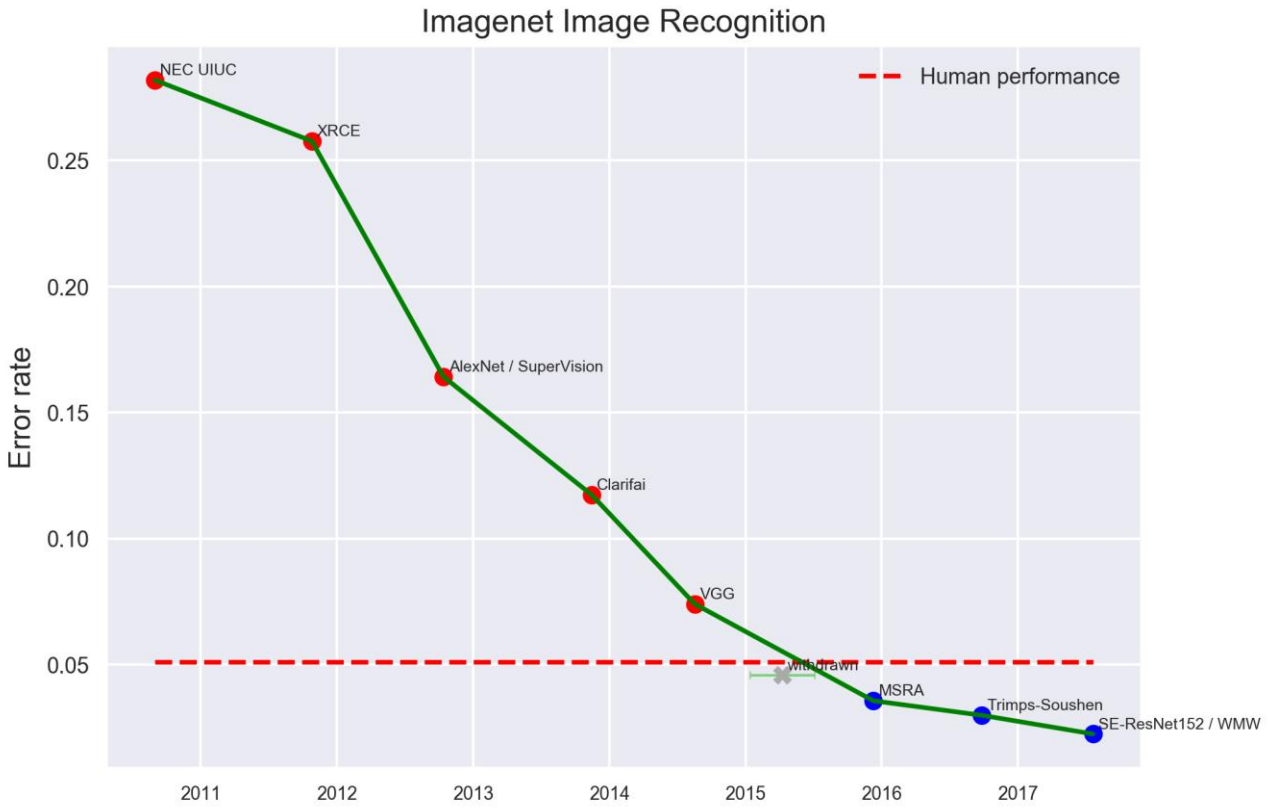
And the results are already coming in…



Processing Capacities

Big Data

Cognitive Sciences



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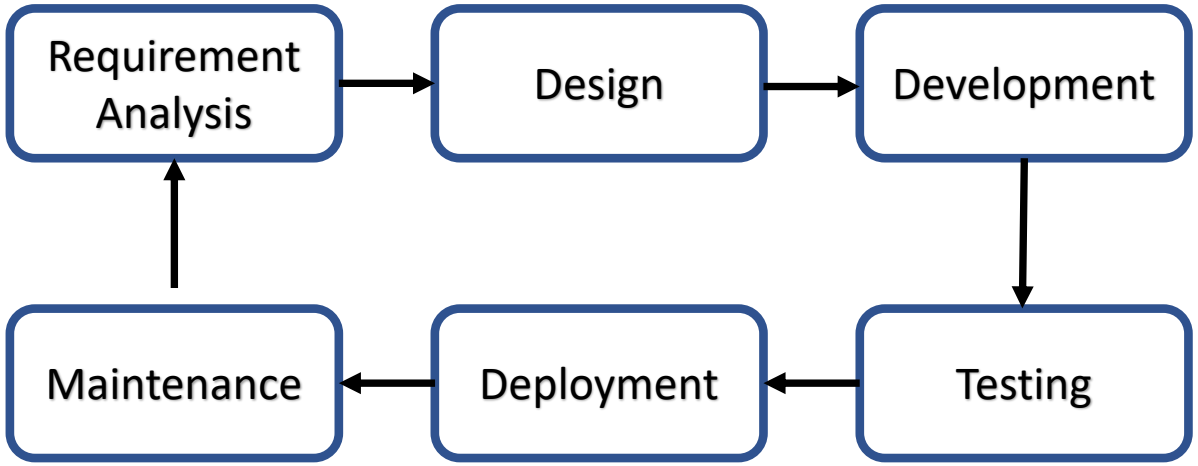
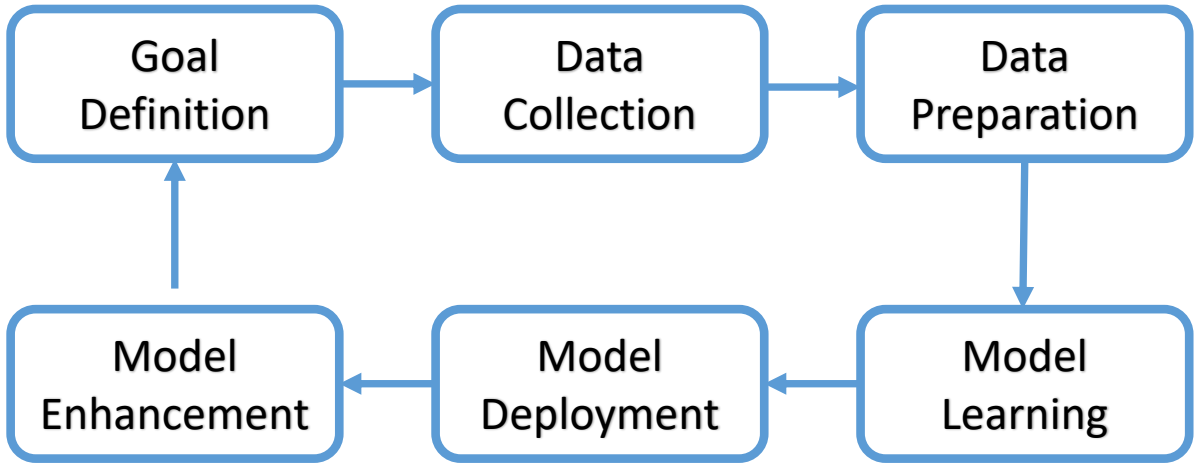
AI changes the Software Development Process…





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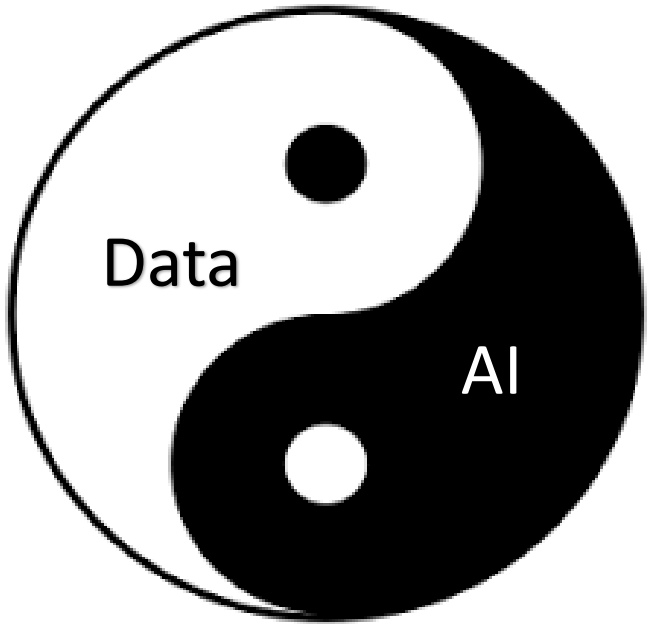
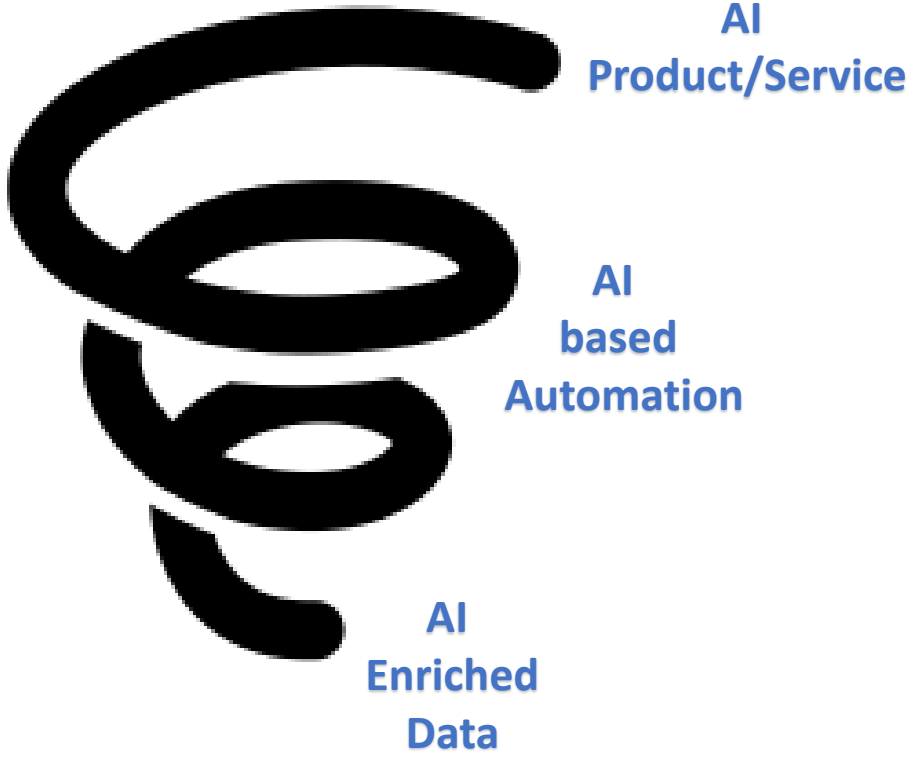
Data and AI is a marriage made in heaven... It is a spiraling journey then on





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The three step evolution…

Stage 1 (AI enriched Data)

- Start with the Simplest Data that can be collected easily.
- Enrich the Data with AI

Stage 2 (AI oriented Automation)

- Use the Tagged Data to build ML models that can help the Automation of the Simple Tasks and Processes in the organization.

Stage 3 (AI Product/Service)

- Build your products/services with an AI core

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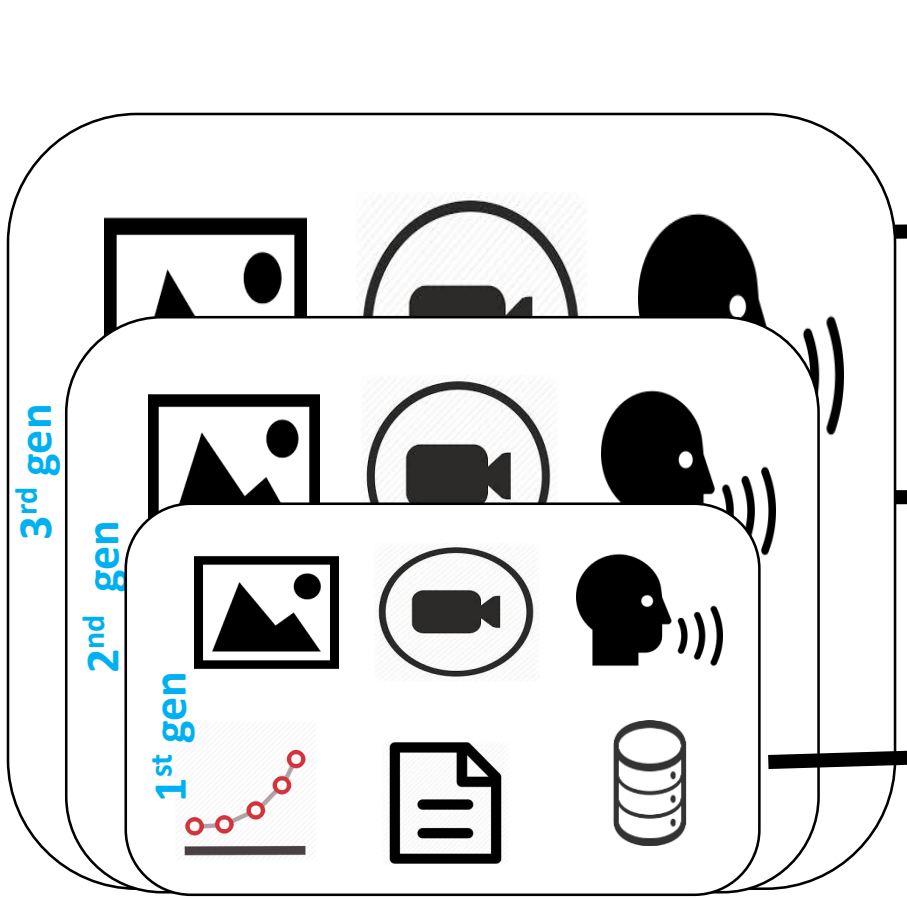
another way to think about it…



AI product/service

AI oriented Automation

AI enriched data and making simple Use Cases

Data Strategy

AI/ML Strategy

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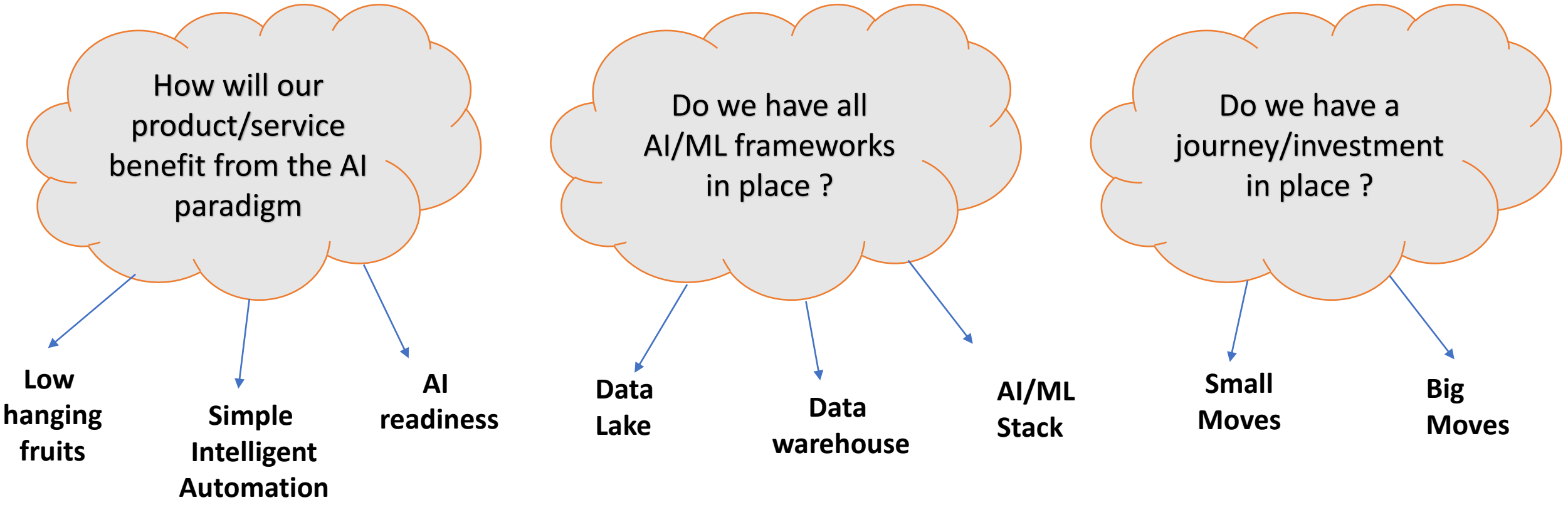
An unexamined strategy is not worth having…



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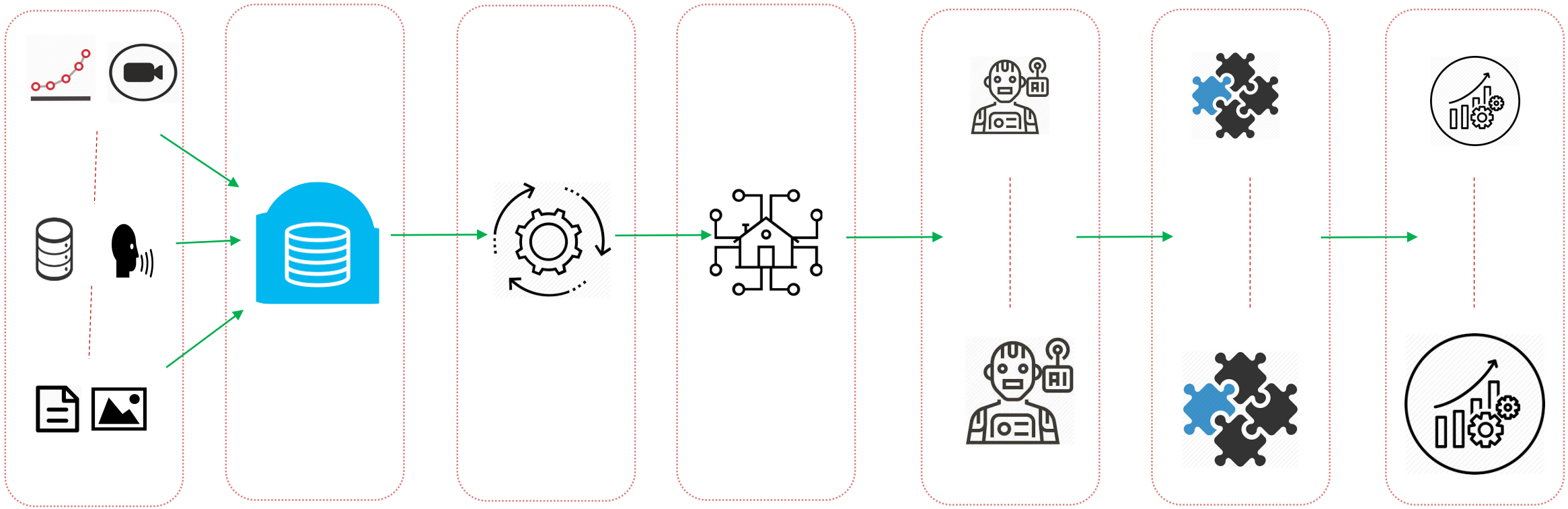
What the details will look like…



Enterprise Data

Enterprise Data Lake

Data Processing Stack

Data Warehouse

AI Use Case

Workflow Integration

Business Value

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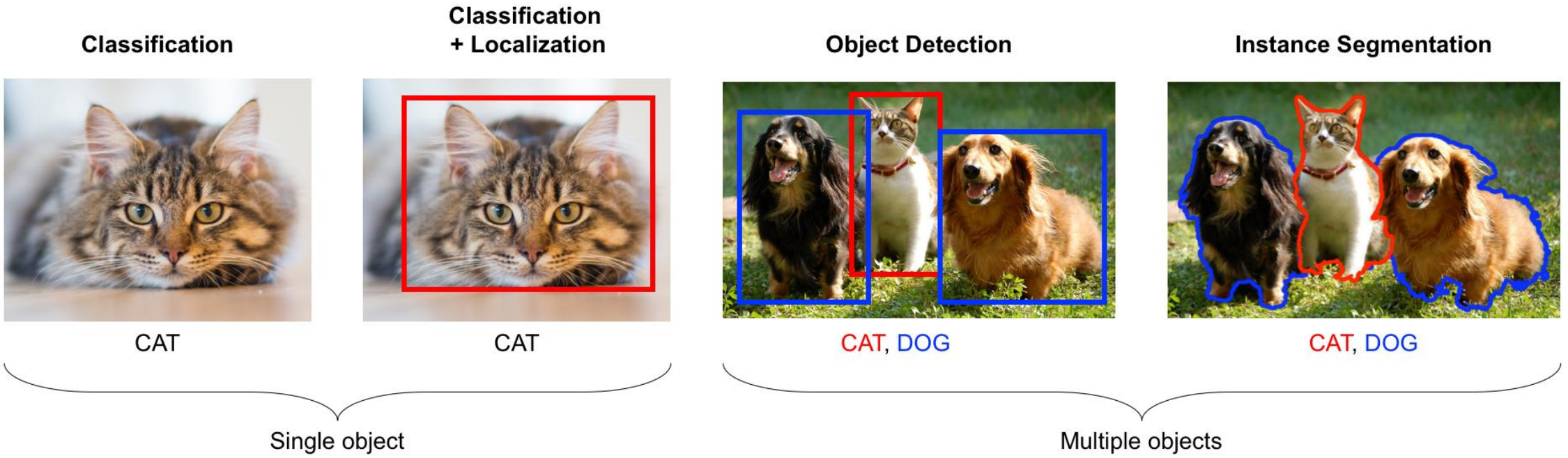
CONNECTED ENTERPRISE

Stage 1

It all starts with AI enriched Data

are you tagging your images and videos…



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are you leveraging human identification and human emotion detection…

IDENTIFY PEOPLE AND EXTRACT EMOTIONS

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are you extracting important textual information from images/videos…

EXTRACT TEXT FROM IMAGES / VIDEOS

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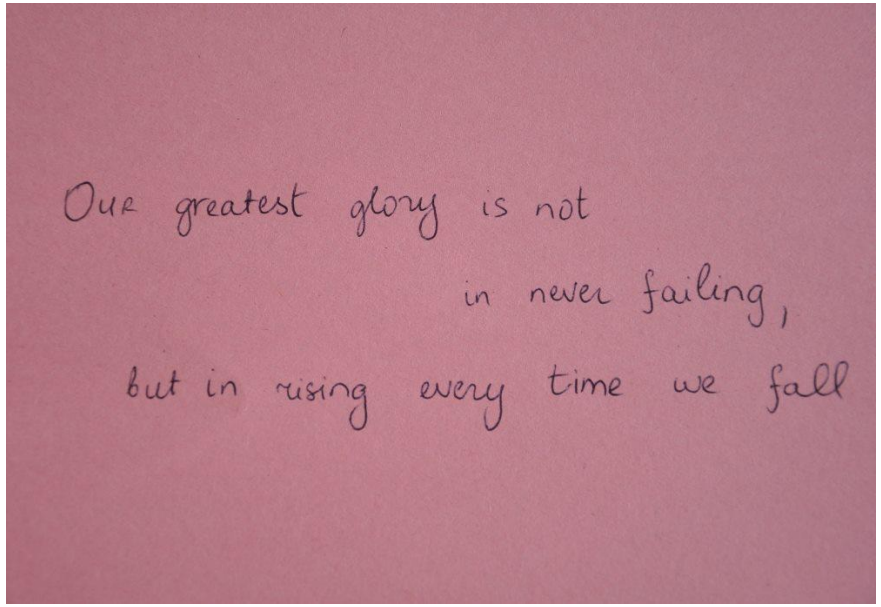
are you reading handwritten data...

CONVERT HUMAN TEXT INTO ELECTRONIC TEXT



Our greatest glory is not
in never failing ,
but in rising every
time we fall

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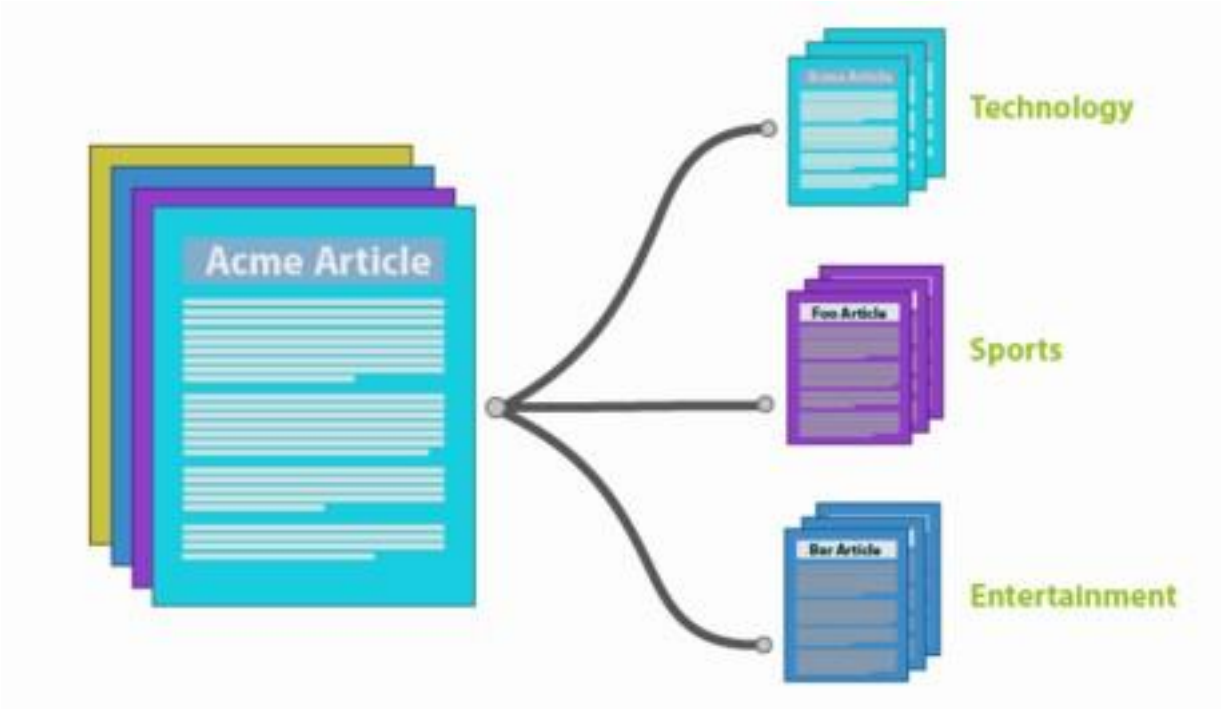
are you tagging the different documents into appropriate categories…

ORGANIZE ELECTRONIC TEXT



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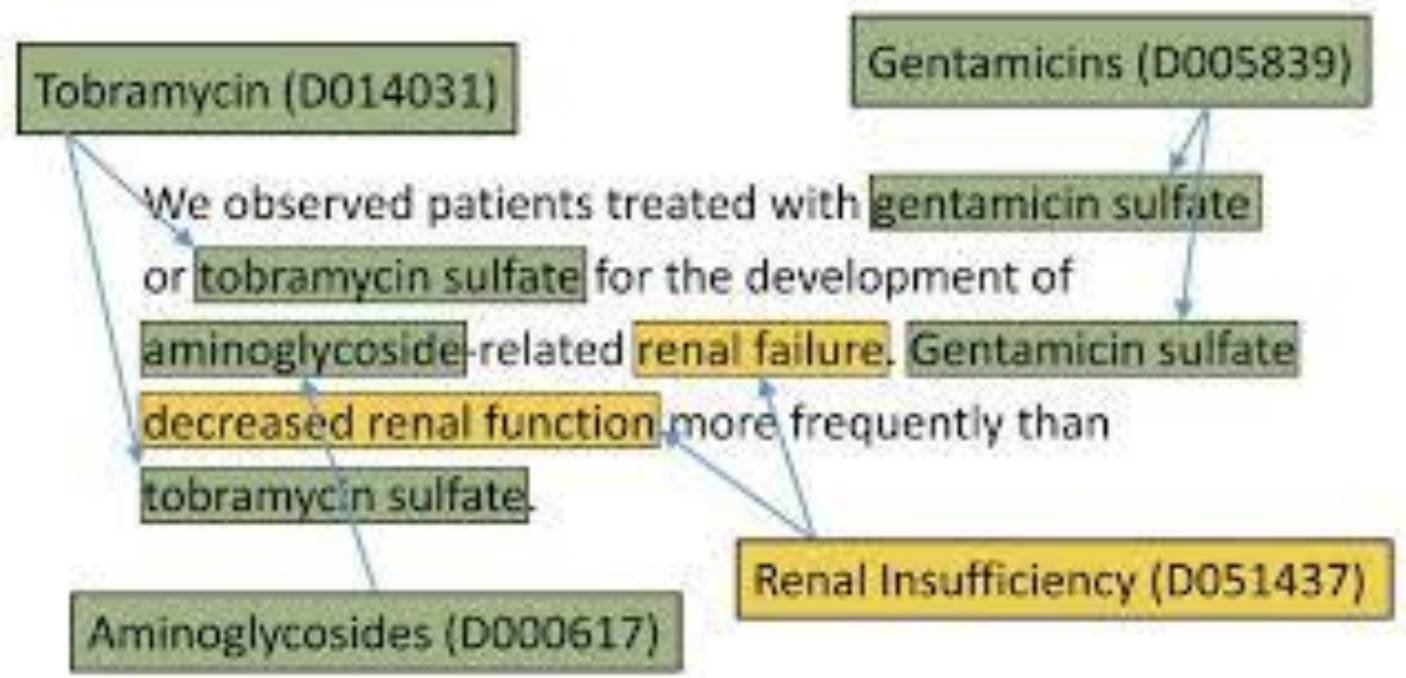
are you extracting important ideas in written and spoken content…

EXTRACT SIMPLE AND IMPORTANT IDEAS FROM ELECTRONIC TEXT



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Are you mining sentiments/opinion in the written and spoken…

EXTRACT OPINION FROM ELECTRONIC TEXT

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Converting speech to text…

CONVERT VOICE TO TEXT AND APPLY ALL ELECTRONIC TEXT IDEAS…

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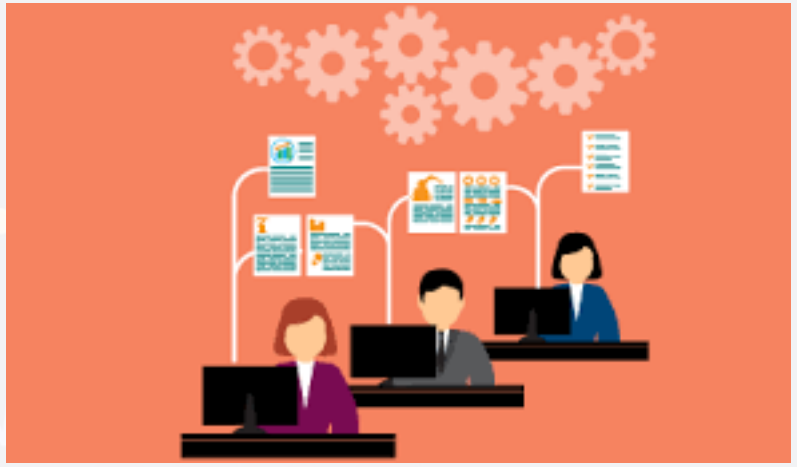


Stage 2

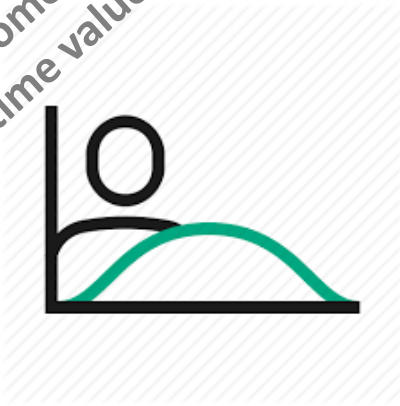
AI based automation of workflows

AI tagged big data lakes can be used for many types of automations…

recommendations

forecasting

customer lifetime value



location analysis

churn analysis

fraud detection

logistics analysis

Price optimization

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Extracting semantic ideas from documents and answering questions…

Our chosen vendor will get in touch with you regarding some information.

It is expected that our vendor will require personal details of the following type – Date of birth, Address and salary information. We would like to request you to kindly share this information with them.

→ **Privacy Data Processing Request**

The information will be used to filling up details in the Insurance form that we will need to fill on your behalf.

→ **Privacy Data Purpose**

There will be nothing else that will be required.

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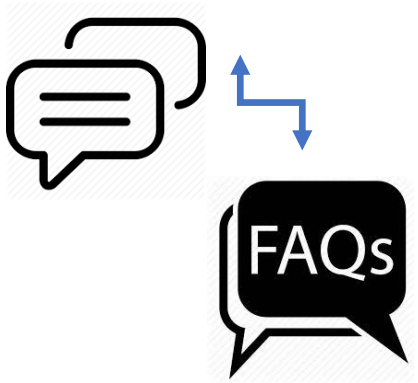
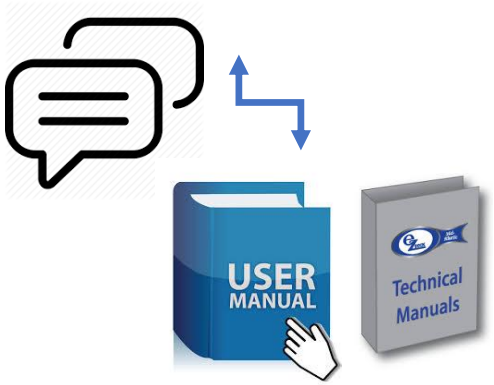
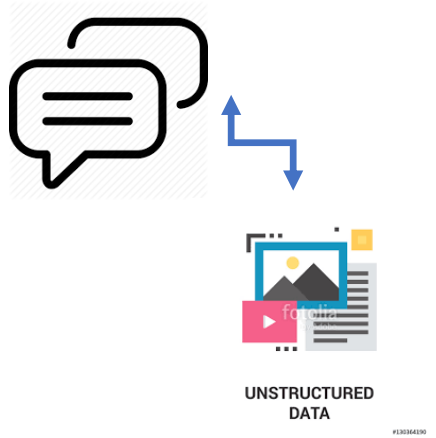
Knowledge based Conversational Agents







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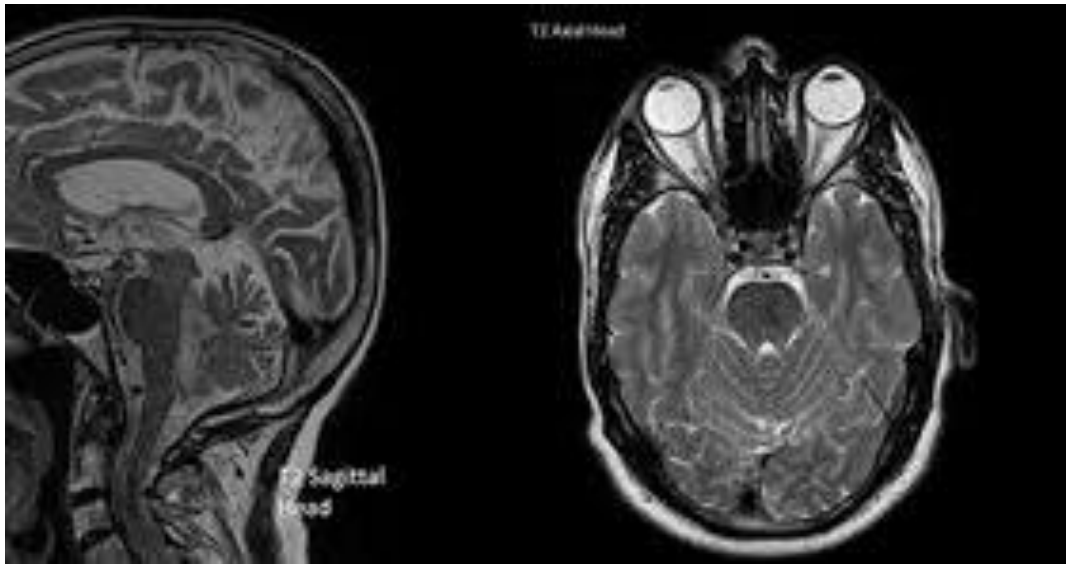
Inferences with complex images

Automated Structural Measurements



Disease Identification

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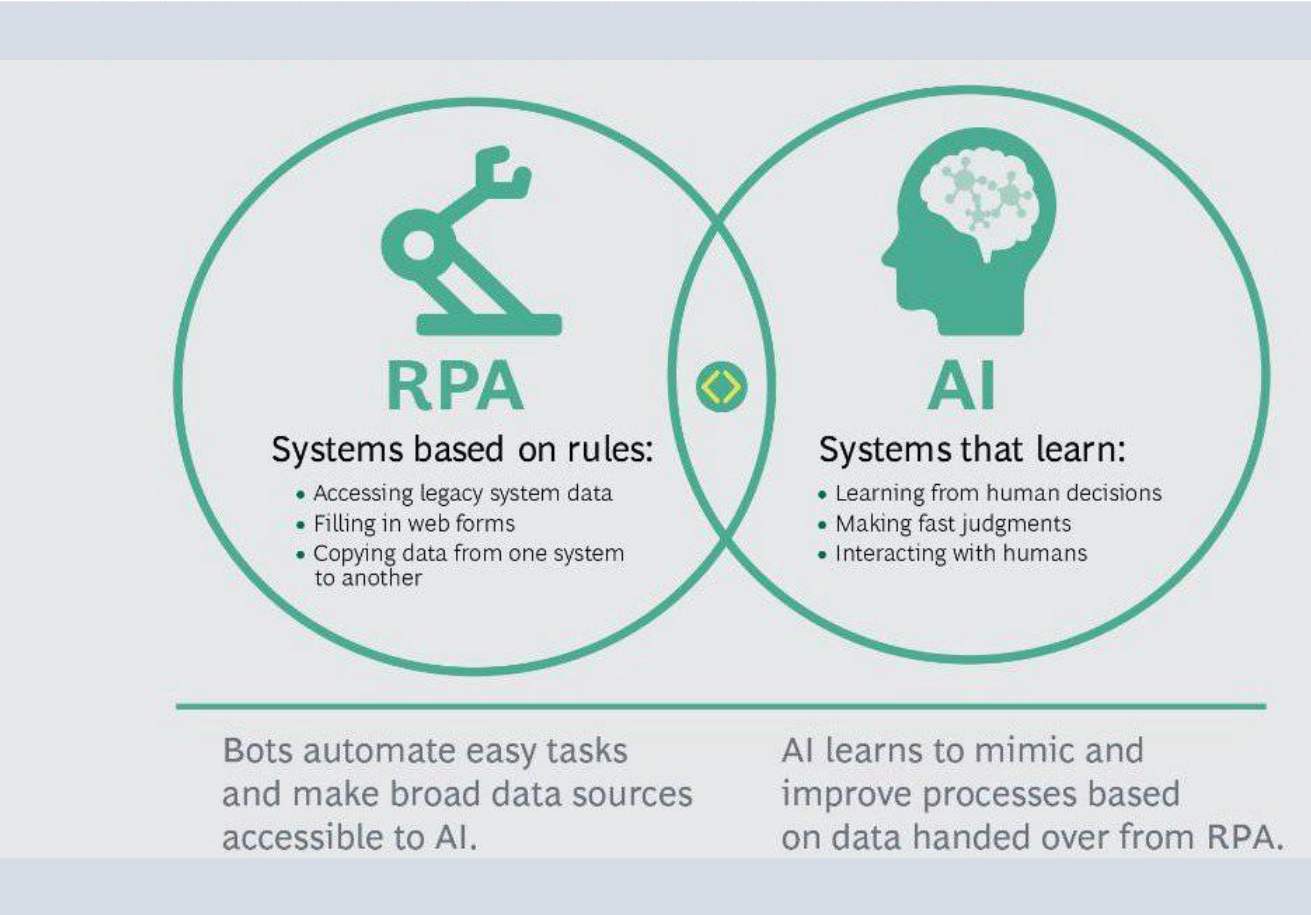
Taking RPA to the next level…



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CONNECTED ENTERPRISE

Stage 3

Building AI products and services

AI generated…

A movie trailer Designed by AI

It was just another day at Jason Hall Elementary. Ryan was walking to his school like any other day, biking from Gother Way to Lincoln Avenue. He always liked how his home was close to school. "Hi!" It was Andy, who had been Ryan's best friend for over 5 years. "Hi Andy! You're up early." I said. "Yeah, my mom has an early meeting today, so I was dropped off near school earlier than usual." I biked along with Andy to school, chatting about videogames and other topics of interest to us. Once we got to class, it was around 8:14. Mr. Alfred strolled into class. "Alright kiddos, it's time to learn your favorite subject… Math." "Awww…" everyone said.
A suspected terrorist organization has recently attacked multiple schools in the Sunnyvale School District, killing 37. Be on the lookout for people with white masks. The breakfast was a combination of what looked like year old "fried" rice, steak fries, and dried squid chips. The fried rice had small green stains of what I hoped were green onions, but it might've just been mold. The mound of food emitted an odor that smelled of decomposed meat. "What is this?" I took one look at that heap of trash and hurried back upstairs to my snack shack composed of Doritos, Cheetos, and Fritos. As normal, my mom had no idea how to make a half decent breakfast. "It's just leftovers from yesterday Thomas!" My mom shouted in disappointment. "You mean last years?" I replied with obvious sass. "Be grateful for what you have, Thomas. Not everyone gets this kind of LUXURY." "Just throw it away." I said with disgust, finishing up my family size bag of "Flamin' Hot" Cheetos.
I started out of the door walking to the bus stop, when I saw Paris turning around the corner. We happily proclaimed "Hello!" at very similar times, and we both laughed. As we waited for the bus to arrive, we had both talked about our mornings at that point. Paris had sighed in embarrassment as she heard of my morning due to her father being a professional chef. She asked what I had eaten, and I showed her my cheeto-dust covered fingers, and she immediately understood. As I was licking the cheeto-dust off my fingers, Paris interrupted "You know it's not hygenic to lick the cheeto dust off your fingers." "I know, I know…" I replied quietly.

A story written by AI

Fonts being designed by AI

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edge AI…

AI integrated with sensors

AI based wearables

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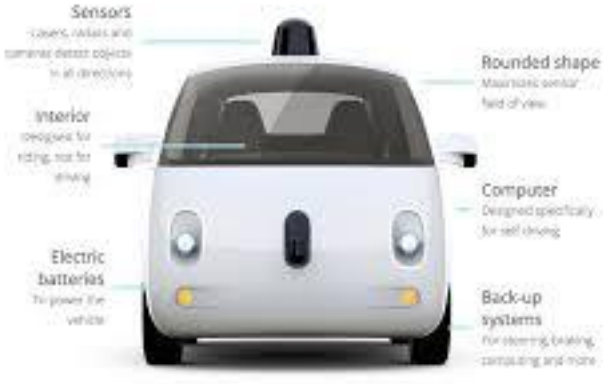
Goal based AI…



Self driven vehicle
With AI locally

Worker Agents in an
Industrial floor

Drug delivery with AI

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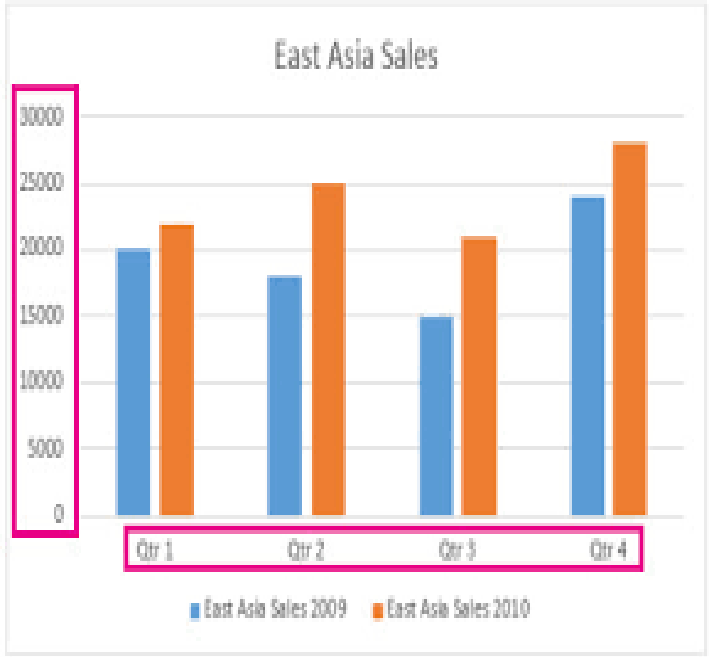
Nagarro is investing heavily in AI…

Information Extraction from Graph Images



Problem statement

Client's R&D division is interested in extracting useful information from "images of graphs" automatically.

Nagarro's solution

Through the use of Neural Networks, we have trained a Neural Model to extract important information elements like Graph Title, Axes Labels, Axes Scale Values, Legends and Trend Lines automatically with very high accuracies. These are then tagged and can be searched with these tags.

Business benefits

Mining of such information automatically significantly decreases human scientific labor investment and allows for it to be channelized into more creative tasks. This is a major cost savings for the organization and investment in advanced value creation

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Detecting Mistakes in Real time Industrial Environments

Problem statement

Client is interested in having an algorithm oversee a worker building a wiring harness for a Car and raise an alarm in case the worker makes an error in the wiring protocol.

Nagarro's solution

Through the use of Neural Networks, we have trained a Neural Model that reacts to a Live Video feed when a mistake or a wrong wiring action is executed.

Business benefits

Ensuring timely Quality Interventions can save organizations a lot of cost and effort thus helping them achieve very efficient Manufacturing Pipelines.

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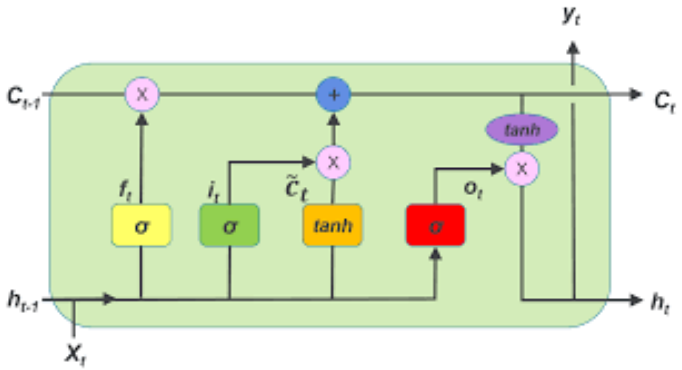
Predictive Maintenance of Industrial Machines



Problem statement

Machine Sensor Data at very high frequency and of very high dimensionality that can be made sense of so that one can build a platform for predictive management and maintenance.

Nagarro's solution

Nagarro developed a complex Deep Neural Network to analyze the data and render it to a simpler sequence which could be used to understand the different states of the Machine.

Business benefits

Minimize failures of the machine because of better forewarning about the sates of the machines

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Extract Privacy Specific Information from Text Documents

Problem statement

As Data Protection becomes more and more important for both individuals and companies – the identification and extraction of ‘Privacy Specific Information’ along with their ’Processors’ has become important and burdensome. Is it possible to reduce the human effort in fulfilling such a task?

Nagarro’s solution

Nagarro is building a ‘state of the art’ Machine Learning approach where documents are automatically processed and all kinds of ‘Privacy information’ that is being processed can automatically be extracted out.

Business benefits

Significant ROI in the form of savings realised by automating the very extensive and error prone manual system.

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Nagarro’s value proposition

Specialization

Machine Learning
Deep Learning
Data Sciences
Big-Data Engineering

Technology

Python Data Science Stack
Tensorflow & Pytorch
Spark
Nvidia GPUs

Complete Solutions

Web Application
Mobile Application
Full Integration / Deployment

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THANKS

nagarro

THINKING BREAKTHROUGHS

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