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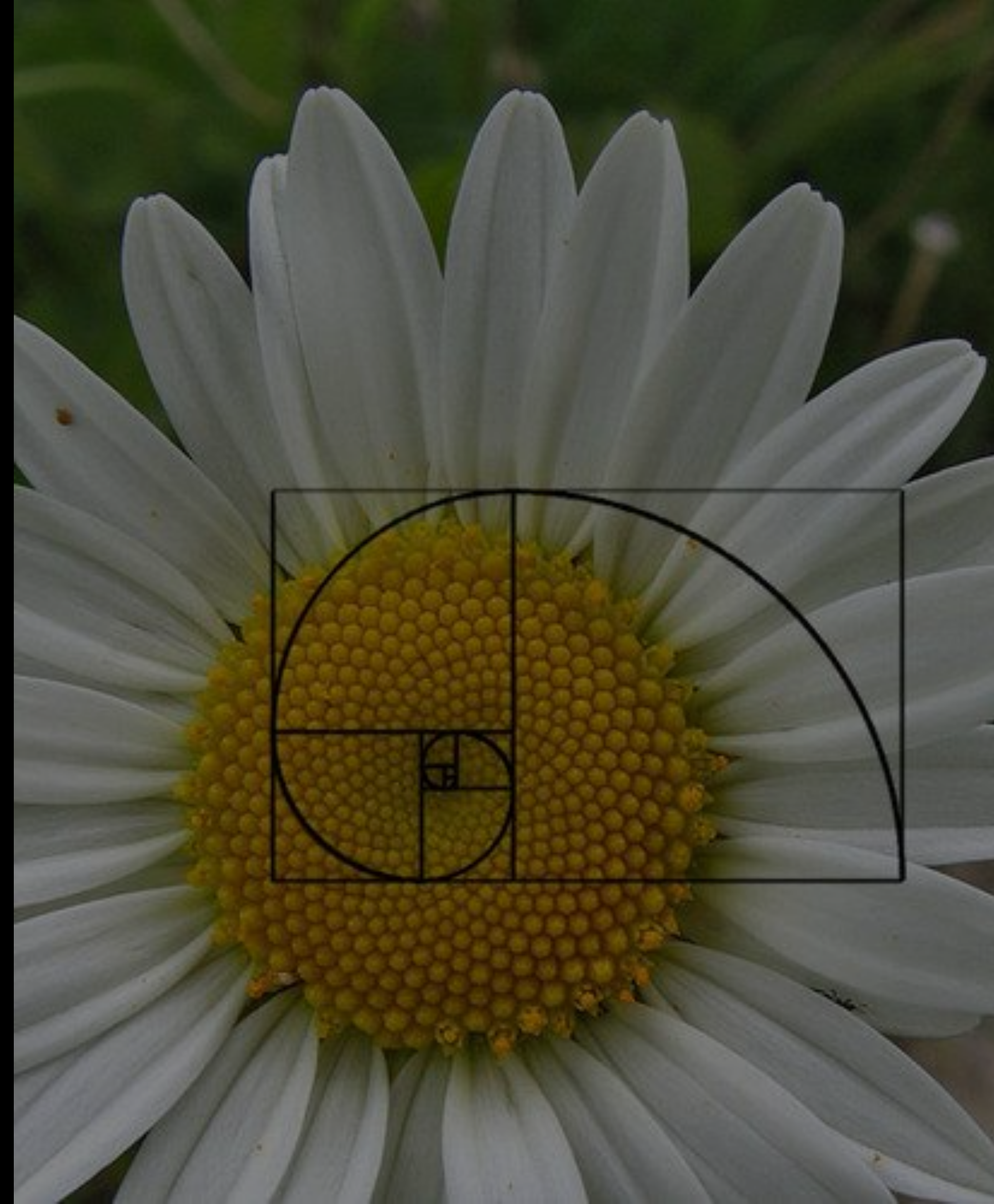
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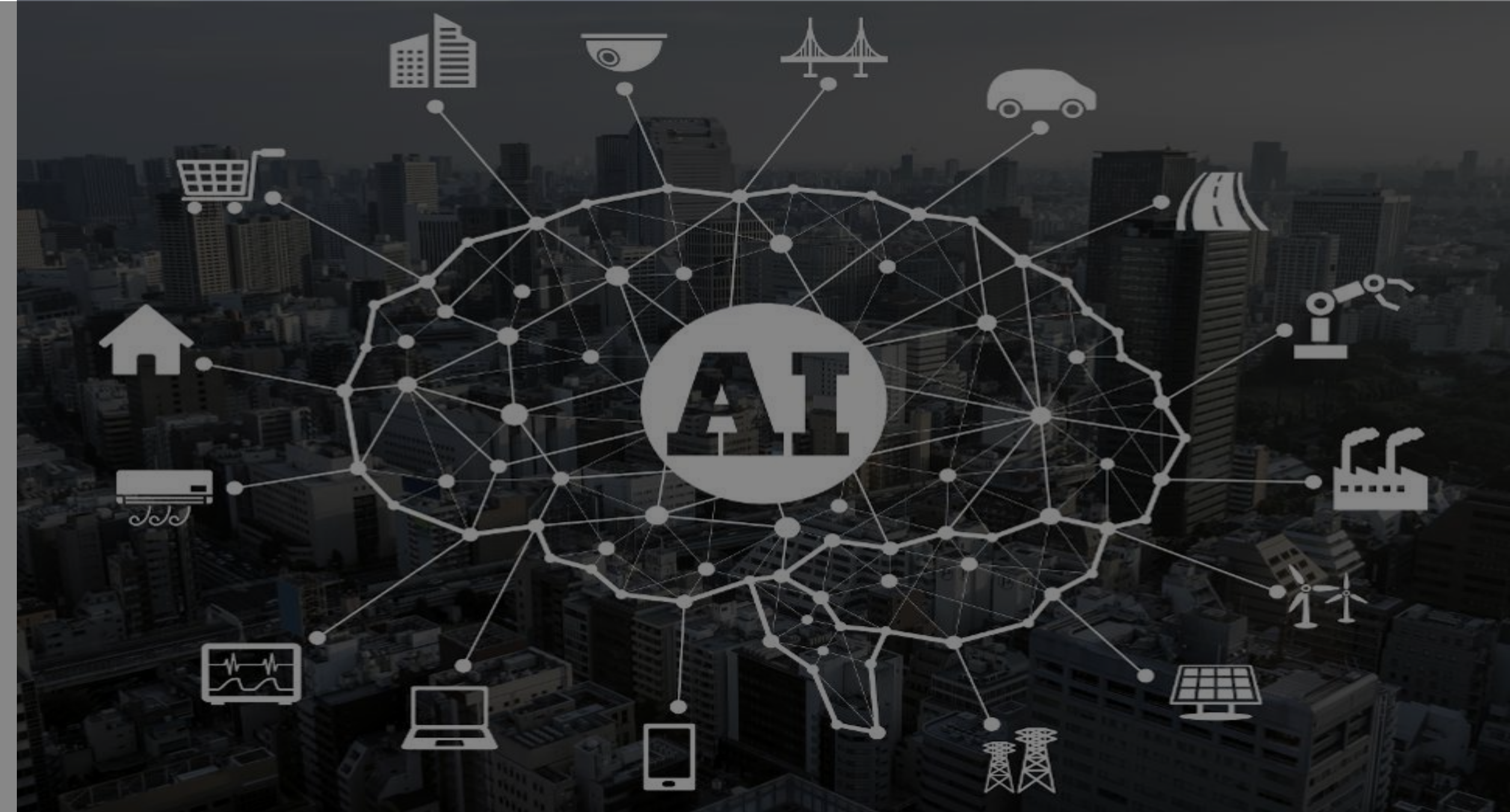
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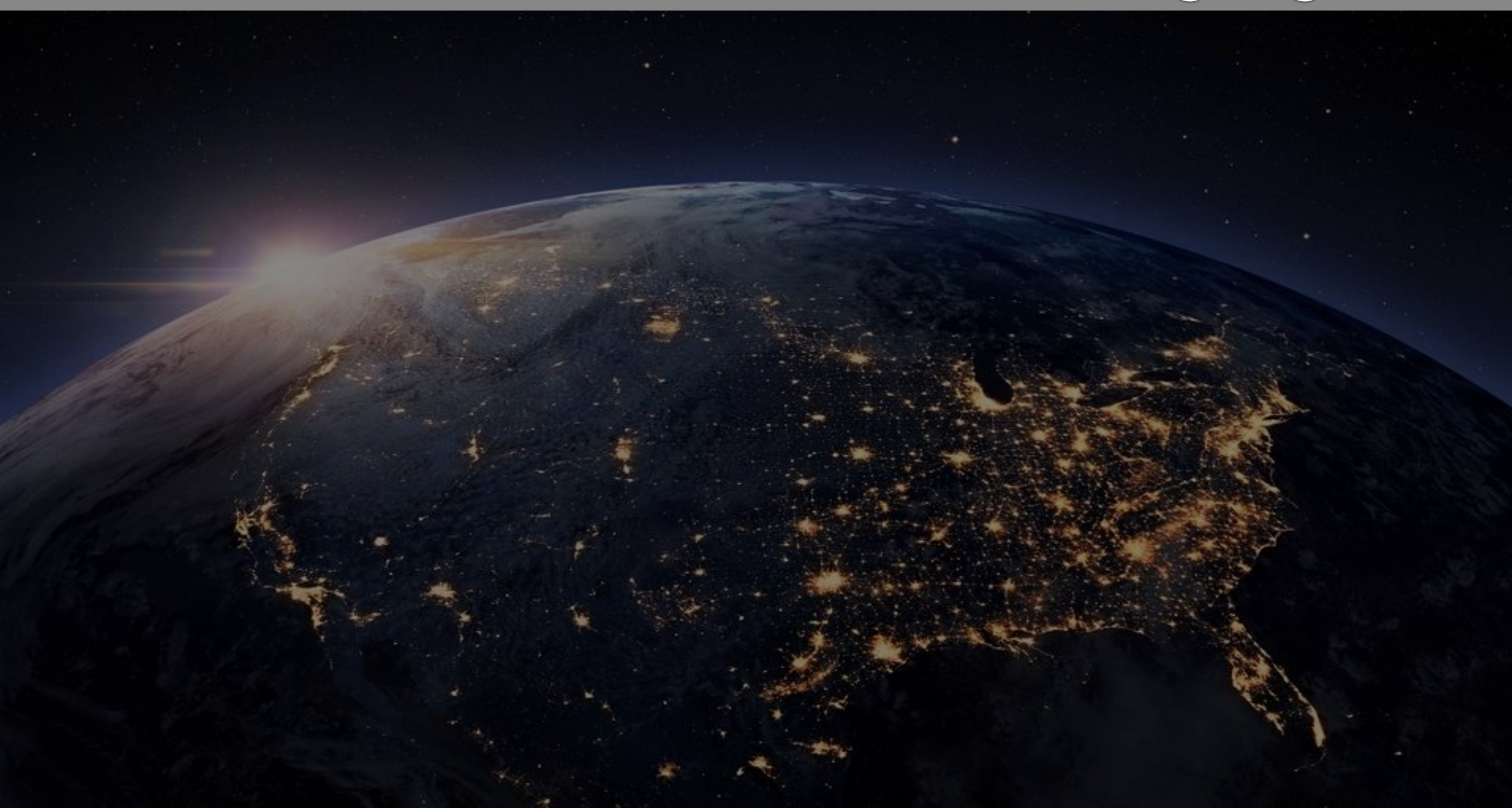
ABOUT DAISY INTELLIGENCE

- A.I. company with 15 years experience working with major corporations.
- Current focus is retail, insurance/banking (and one healthcare company)
- 15+ years assisting companies for make smarter and more profitable operating decisions using math and science.
- We're a team of 40+ computational scientists and math geeks based in Toronto, Canada.





Math is the language of nature ... why not business.



Key defining features of AI vs Predictive analytics/Statistics

- If you analyze only historical data, it is called statistics
 - With labels (prediction/classification), without (clustering, feature detection)
 - Learning occurs only as fast as you collect new data (i.e. the pace of time)
- The ability to learn
 - LEARN = EXPLOIT (what you know) + EXPLORE (simulate new things and remember the results)
 - Called reinforcement learning.
- The ability to simulate the future and results for actions never taken before (i.e. don't need labelled training data)
 - Simulation implies you can learn faster than the pace of time
 - Simulation implies that you have a "model of the world" or "causal theory"
- The ability to make autonomous decisions
- The ability to trade off short term rewards for long term gains

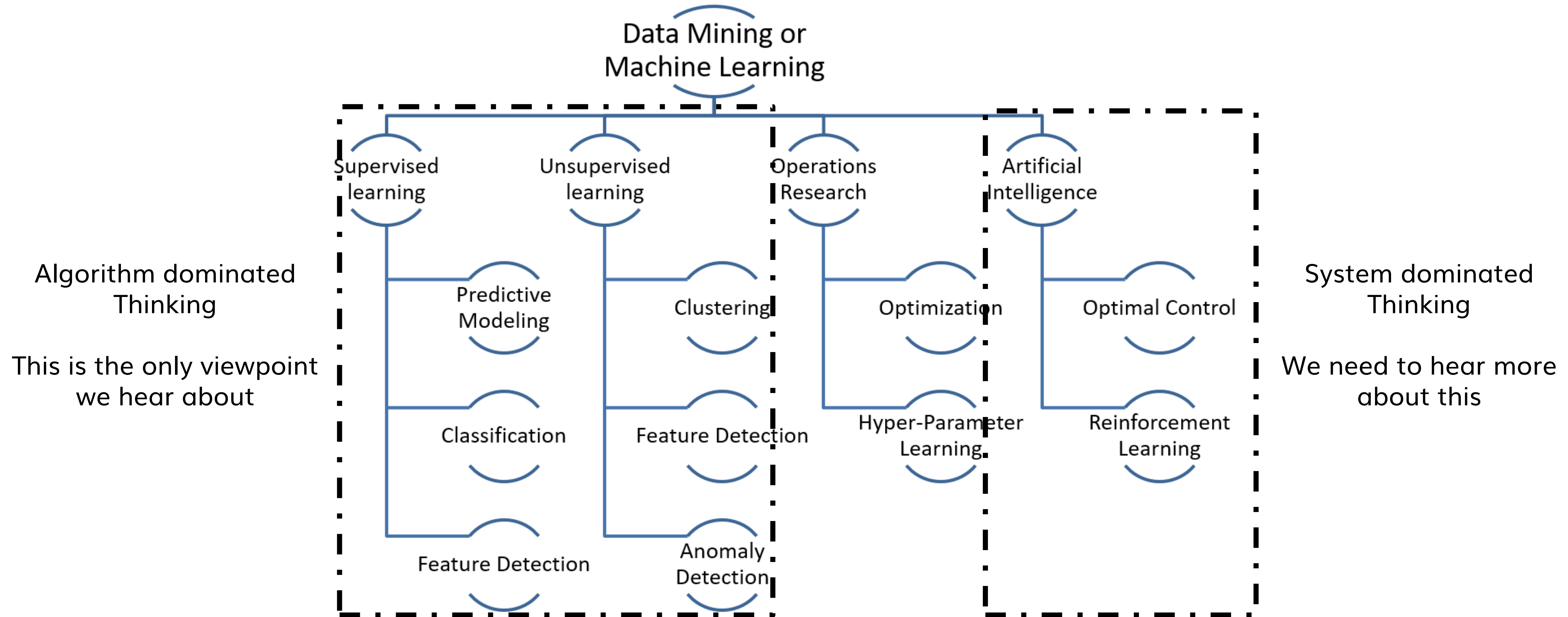
Labelled Training Data Approach does not work

- [Stunning AI Breakthrough Takes Us One Step Closer to the Singularity](#) – Oct 18, 2017
- “So far, the algorithm described only works for problems where there are a countable number of actions you can take, so it would need modification before it could be used for continuous control problems like locomotion [for instance],” Hynes told Gizmodo. “Also, it requires that you have a really good model of the environment. In this case, it literally knows all of the rules. That would be as if you had a robot for which you could exactly predict the outcomes of actions—which is impossible for real, imperfect physical systems
- The nice part, he says, is that there are several other lines of AI research that address both of these issues (e.g. machine learning, evolutionary algorithms, etc.), so it’s really just a matter of integration. “The real key here is the technique,” says Hynes.
- “As expected—and desired—we’re moving farther away from the classic pattern of getting a bunch of human-labeled data and training a model to imitate it,” he said. “What we’re seeing here is a model free from human bias and presuppositions: It can learn whatever it determines is optimal, which may indeed be more nuanced than our own conceptions of the same

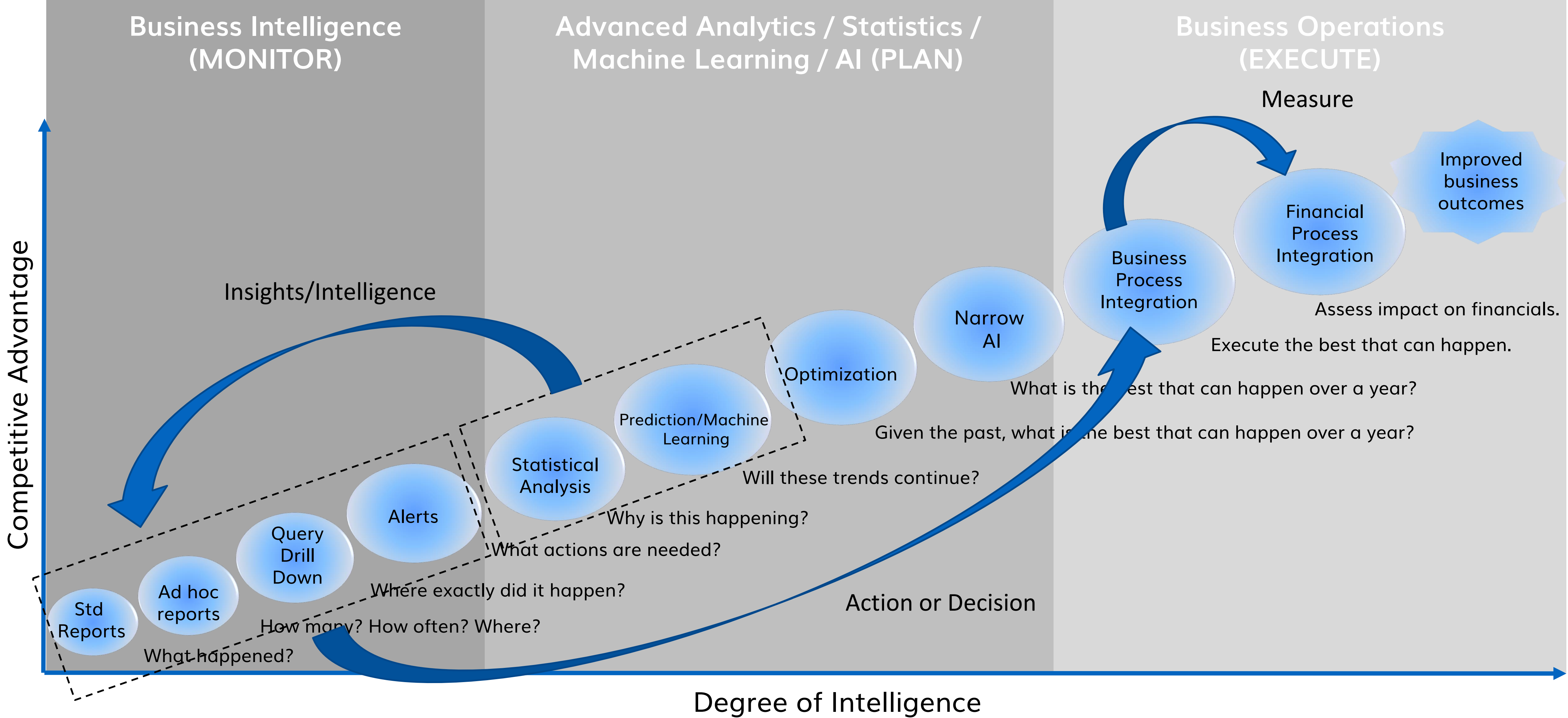
Deep Learning

- Andrew Ng – “Deep Learning can be applied to problems the human brain can solve in less than 1 second”
- Image detection
- Natural Language processing – but we’re not close yet
- Driving

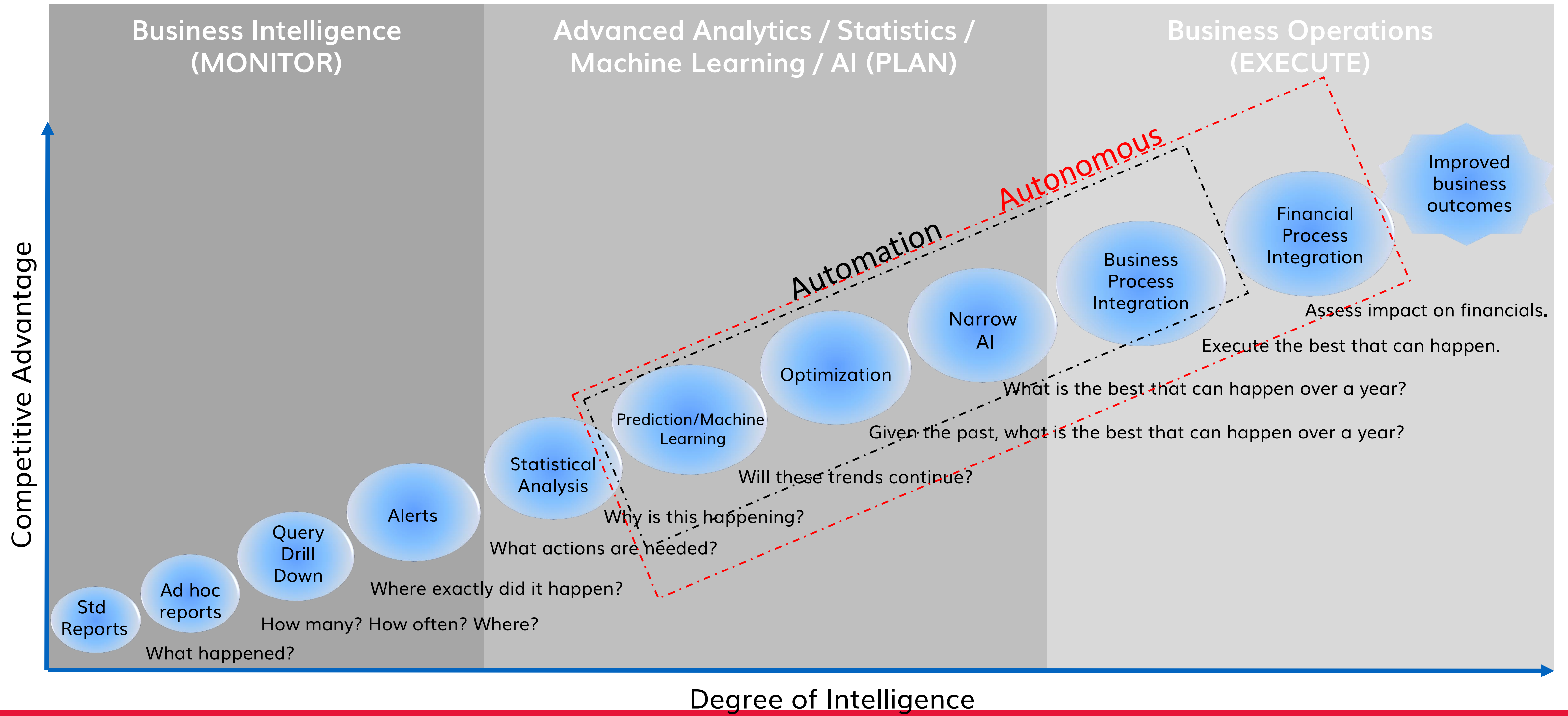
Daisy's Machine Learning Taxonomy



Types of Analysis - Today



Types of Analysis



The background features a complex network of nodes and connections. The nodes are represented by small circles in various shades of blue and white, connected by thin, light-colored lines. The overall aesthetic is technical and futuristic, with a dark blue gradient background.

Why Now?

Moore's Law and GPU computing has made it possible to compute at incredible scale at reasonable cost

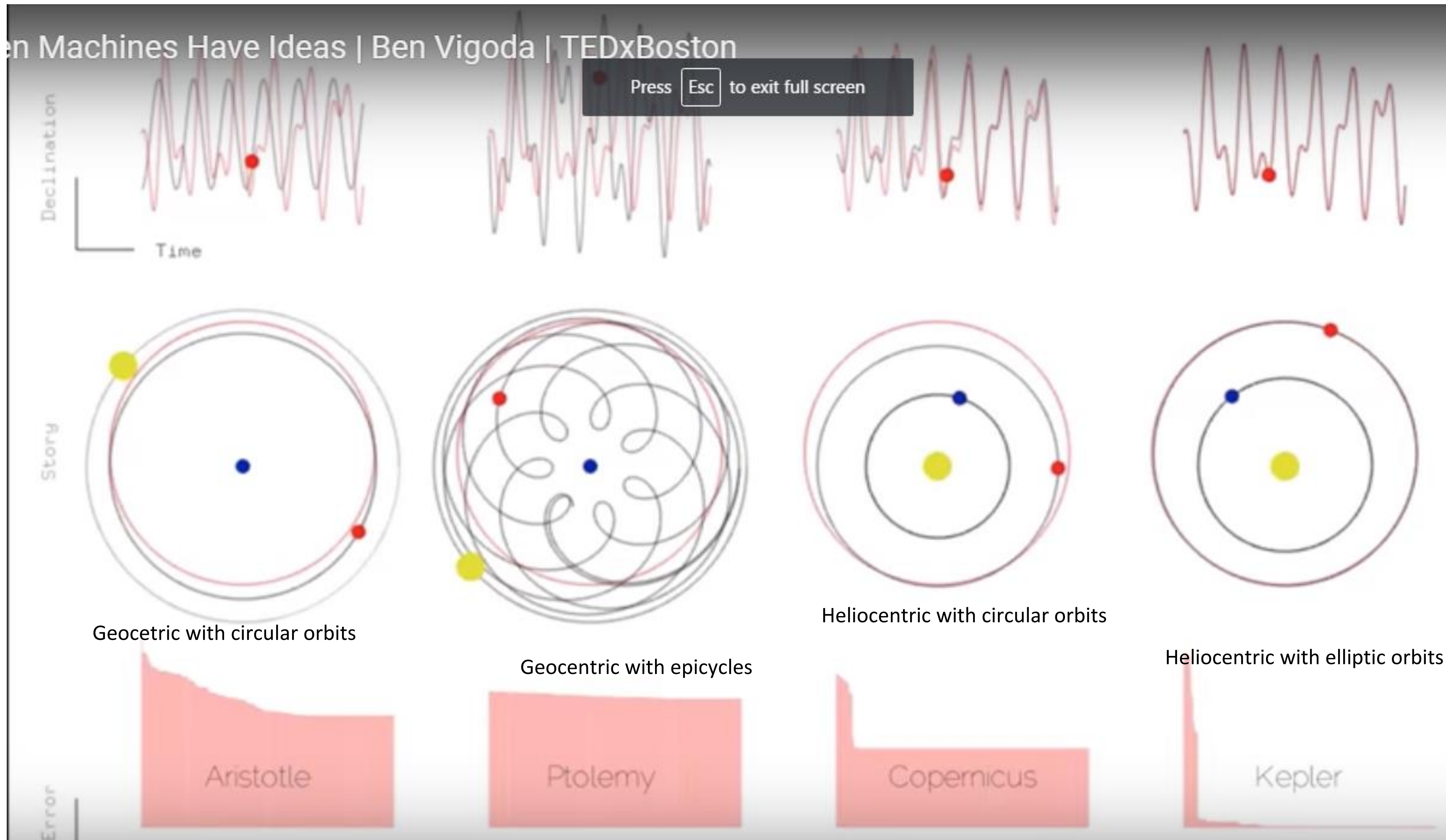
Characteristics of Problems ideal for AI

- Human's as decision makers in complex decision environments
 - Get tired when lots of repetitive decision making
 - Inconsistent when making decisions for the same system state
 - Incapable of taking into account all of data and history
 - Incapable of achieving a long term objective
- Problems Beyond Human capability
 - Highly mathematical
 - Large amounts of data
 - Highly repetitive
 - Have a long term objective
- AI never gets tired
- Is consistent
- Takes into account all the data
- Can achieve a long term goal

You need a “Causal Theory of your Environment”

- Some problems cannot be solved with data alone
- Examples of Data only problems
 - Image detection (handwritten text recognition, medical diagnostic imaging, facial recognition)
 - Logistics/process optimization (dynamic programming problems)
 - Time-series Forecasting (maybe 50%)
- Problems that need a causal theory
 - Driving/Flying/Space vehicles
 - Strategy Games
 - Company sales/profit maximization

A Causal Theory – Orbital Mechanics to predict plant locations ... getting the wrong theory



- The wrong theory results in large error rates
- Better theories get lower error rates
- The almost correct theory dramatically reduces the error

Examples of other incomplete theories

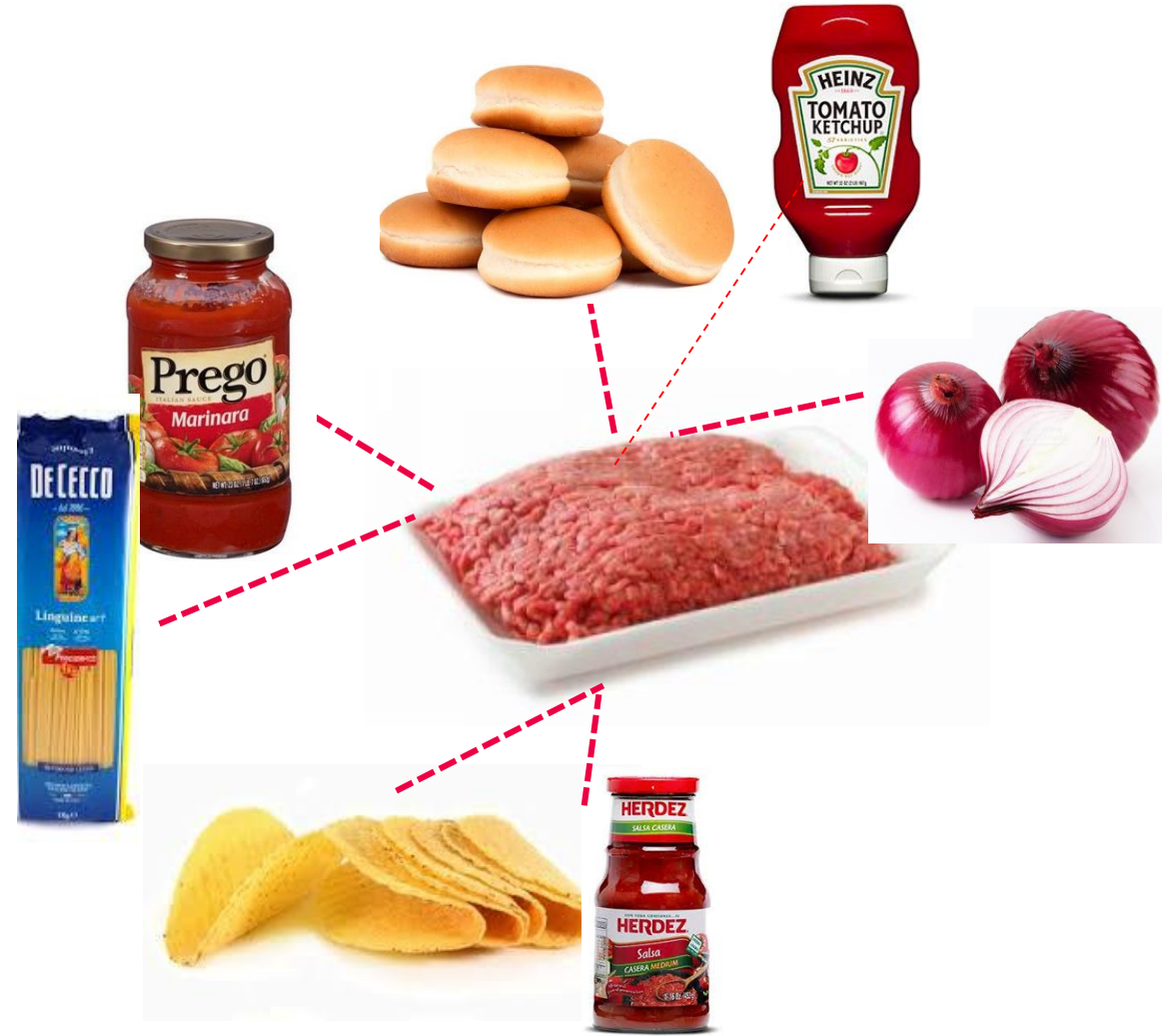
- Increasing response rates to direct marketing grows overall sales/profits
- Predictive analytics or rules for fraud detection
- Natural Language processing (treating it as a data only problem)
 - Microsoft Chat Bot
 - Siri
- Cancer research and Watson

What else is missing from the conversation?

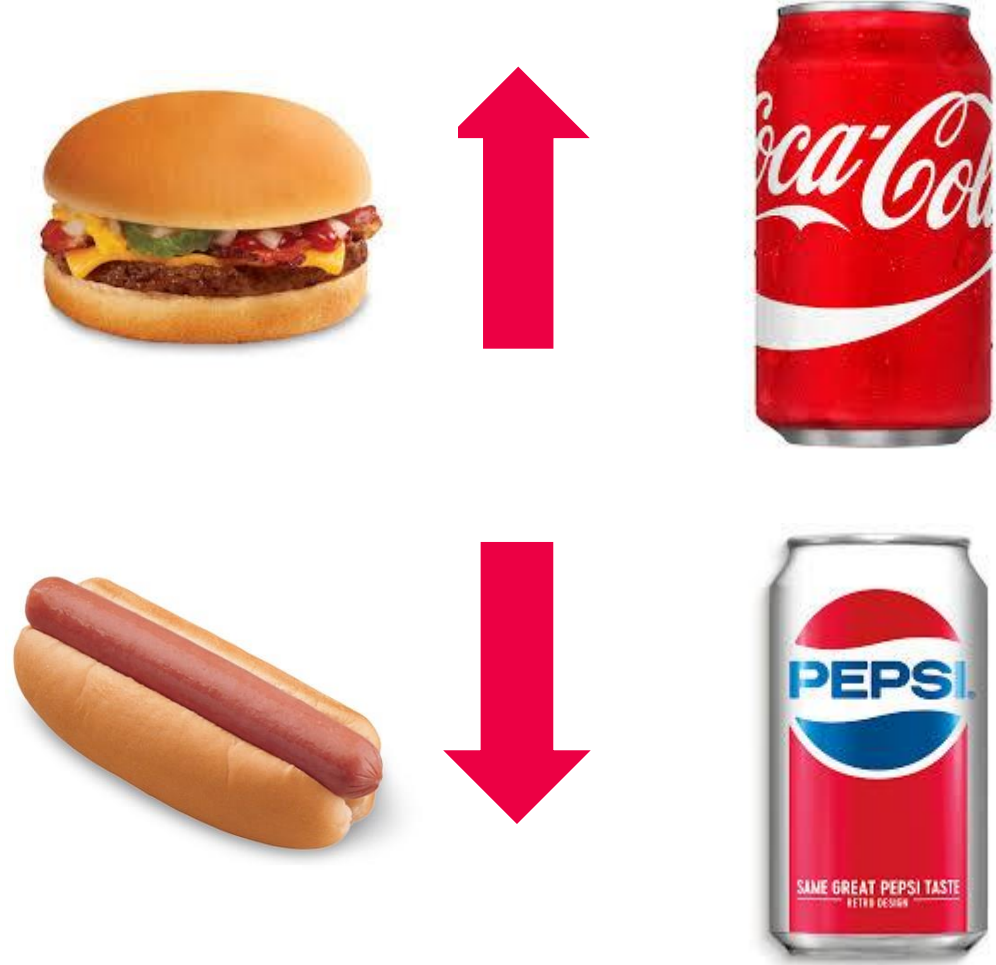
- Important considerations for an autonomous system
 - Control
 - Stability
 - Fault Tolerance
 - OODA (Observe, Orient, Decide, Act) control loop
- Engineering thinking should lead the practical application of AI in all facets of human life

Daisy's Theory of Retail is based on fundamental retail truths ...

Associated Sales
Identify important product affinities responsible for additional sales



Cannibalization
Minimize promotions that will simply steal from another product option



Promotional & Purchasing Cadence
Minimize product promotion that will reduce future sales

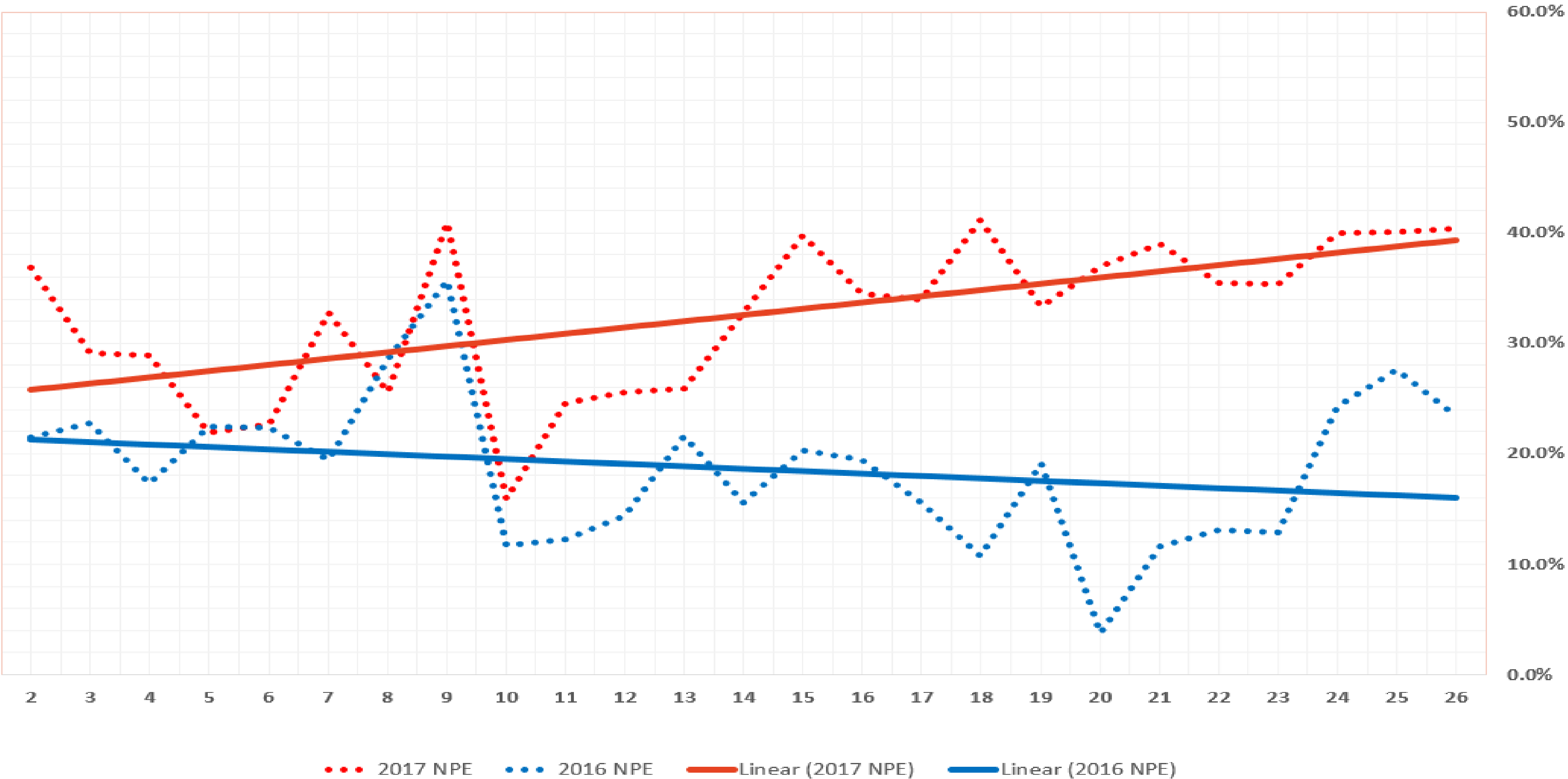


And...
Assess for price elasticity, promo elasticity, seasonality, weather...



Daisy's A.I. Simulation Engine™ considers billions of alternatives before recommending the optimal choice to maximize incremental total sales, transactions or margins.

“Without a doubt, Daisy has driven a 'meaningful lift' in incremental same store revenue and trips without any additional margin cost” Scott Little, CFO Earth Fare





Thoughts...

- Will the people operating your business today be with you in 10 years?
- Will you train the next generation of employees the same way you trained the last? Gut feel and intuition?
- Do you believe that in 10 years machines will be executing corporate operations?
- What do Amazon, Google, Uber use to run their businesses?
- What if your key competitors doubled their profit?
- Early adopters of AI technology will gain strategic advantage and use it to grow market share.
- Those who don't adopt AI solution into core operations will be challenged to withstand the margin pressure.

Key takeaways....

- AI is ACCESSIBLE and delivering results now with verifiable ROI.
- Removes highly repetitive tasks away from employees and let them focus on other more strategic priorities.
- AI may require a change to existing decision making and compensation structures.
- AI is an invisible advantage.



Daisy's Mission

Use Artificial Intelligence to increase economic efficiency reducing "economic friction" and "societal poverty" one industry and one company at a time.

The future of AI is the creation of many autonomous systems

- Daisy's vision is to deliver the autonomous enterprise
 - Assist our clients in all industries to significantly grow net profits.
 - o Reducing the cost of all goods, services and taxation **lowering the cost of living** thereby **minimizing poverty**
 - o Improve the **quality of goods and services delivery** thereby **improving quality of life**
 - **Improve the nature of human work** eliminating highly complex and repetitive tasks allowing people to focus on what we are best at

daisy

INTELLIGENCE

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See what others don't.



Promotional
Product Selection



Price
Optimization



Inventory
Forecasting