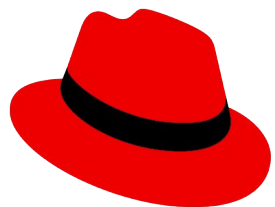




Connect

From IT to OT to ML

The patch to success to IT solutions



Red Hat

**neuro
space**

Kim Borup

Principal Architect

Rasmus Steiniche

CEO



Red Hat

DELLTechnologies



**Hewlett Packard
Enterprise**

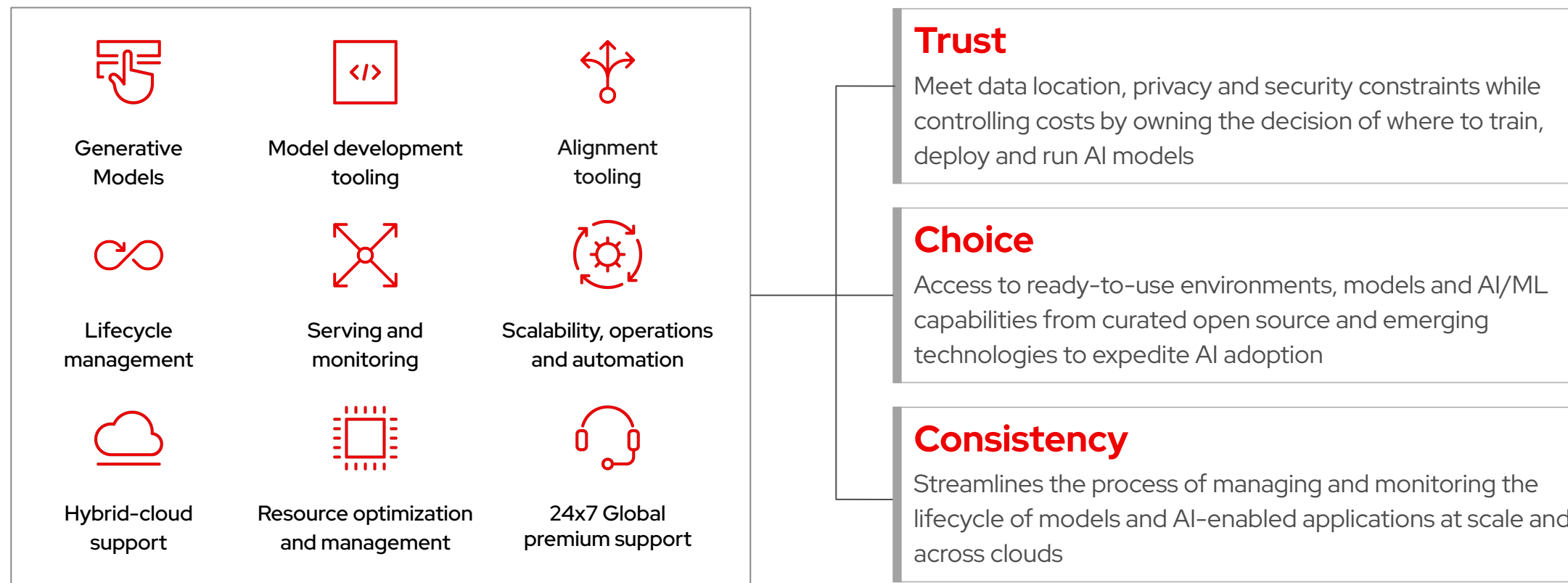


Red Hat



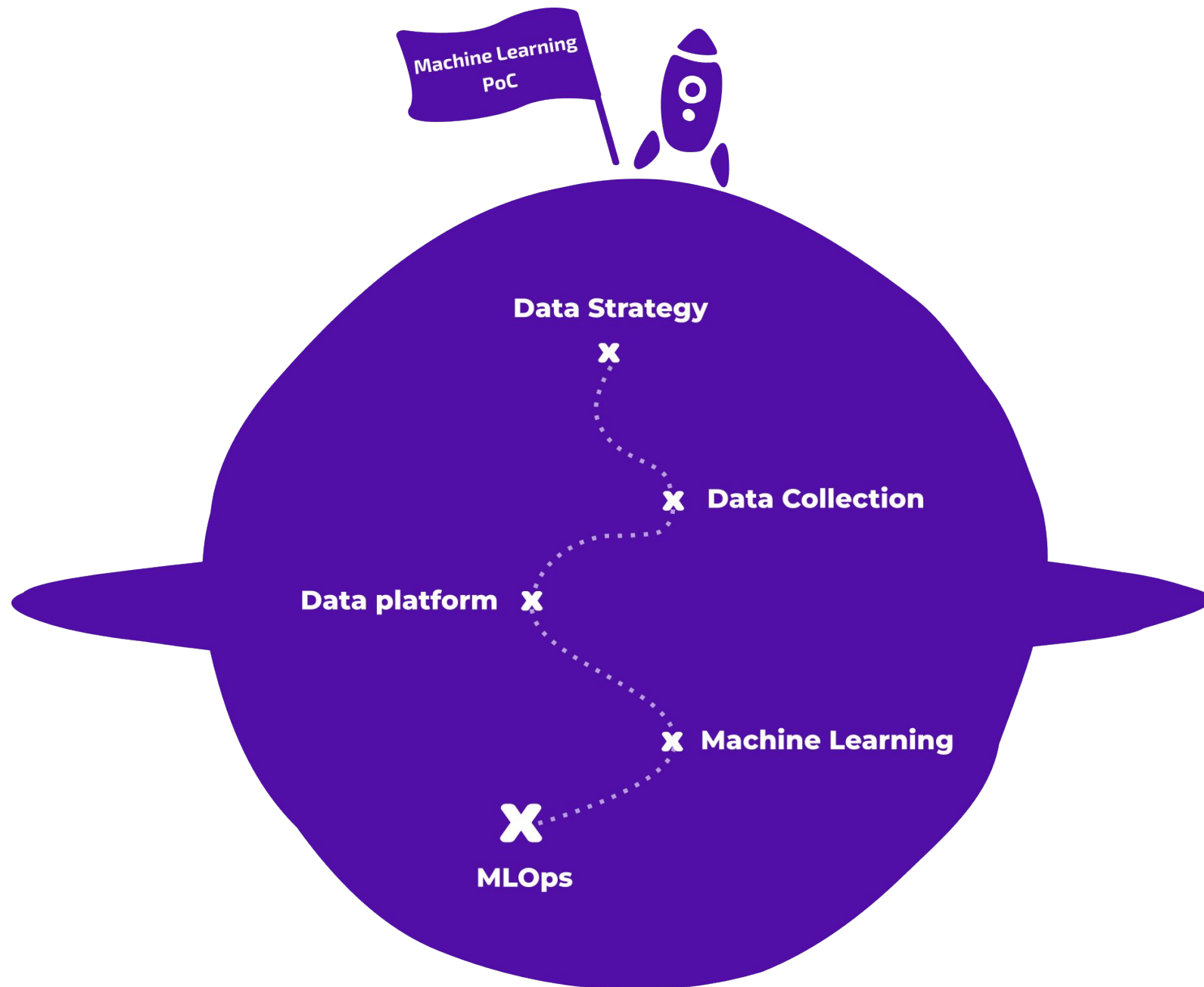
Red Hat AI platform

Red Hat offers generative AI and MLOps capabilities for building flexible, trusted AI solutions at scale



neuro space

Success with AI



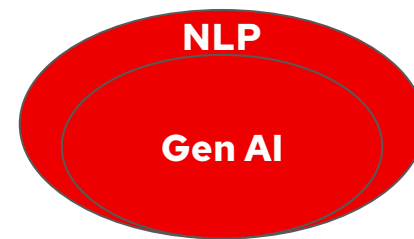
AI, ML, GenAI, Confused?

What is AI?

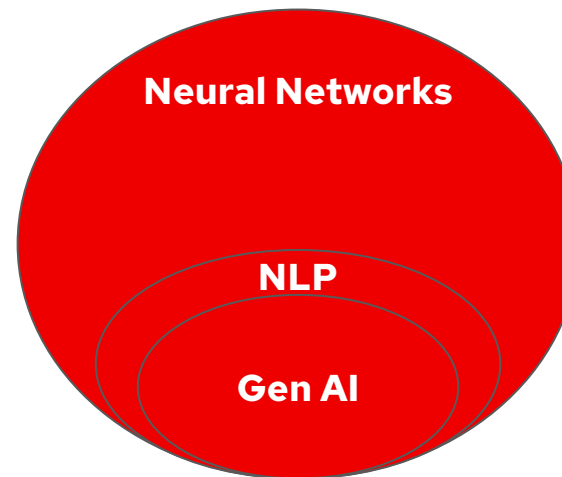


Gen AI

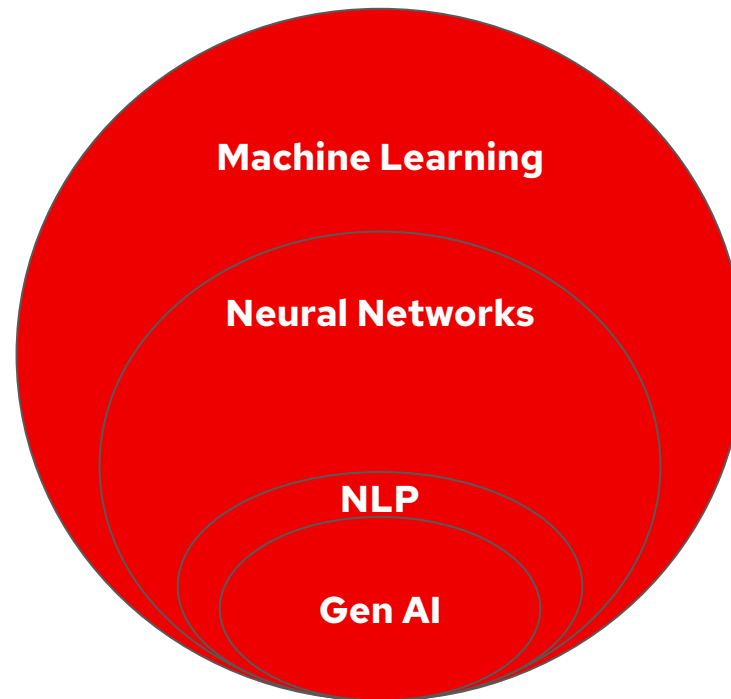
What is AI?



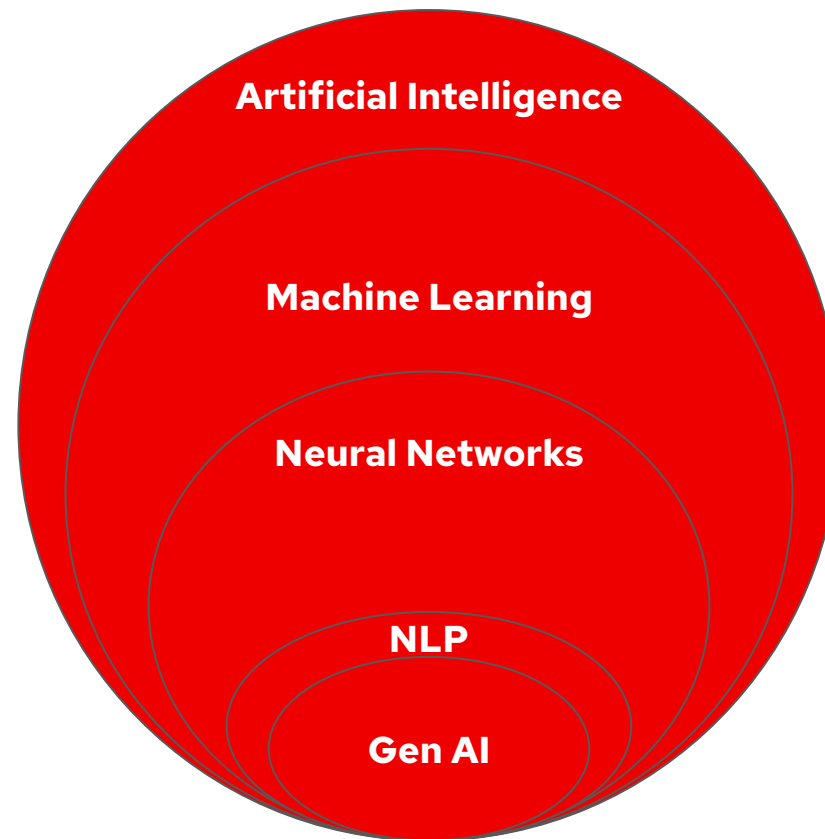
What is AI?



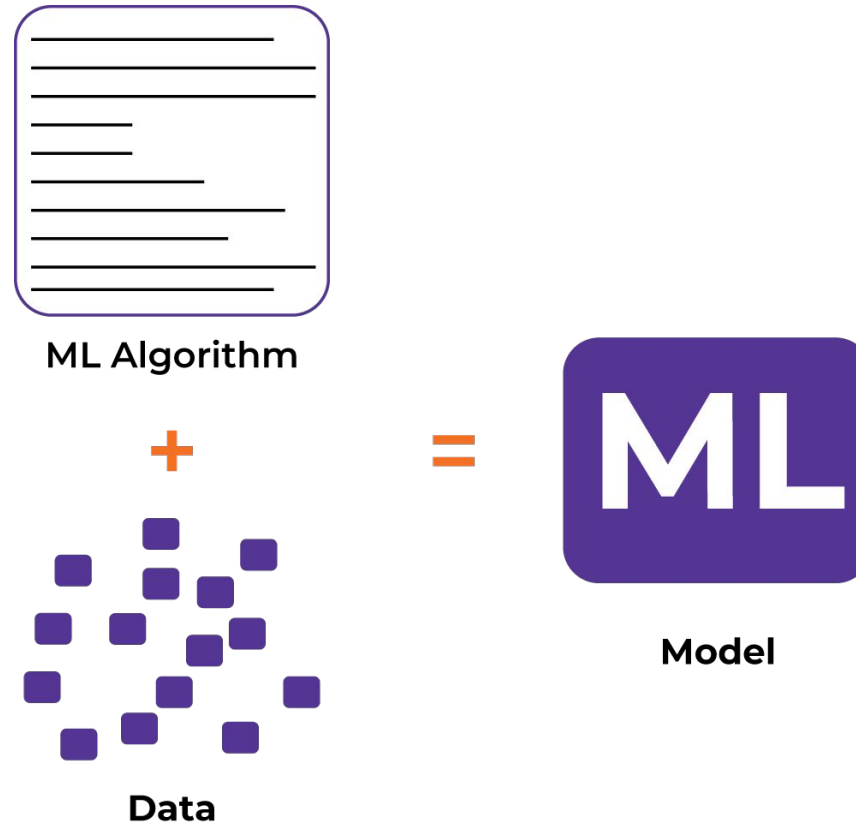
What is AI?



What is AI?

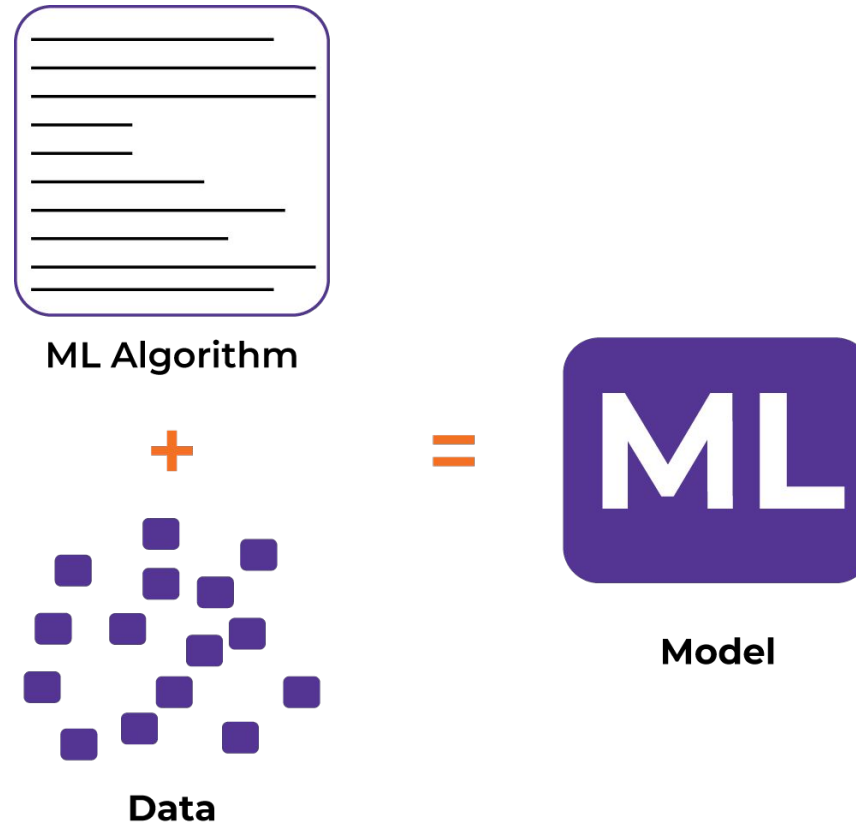


What is AI?



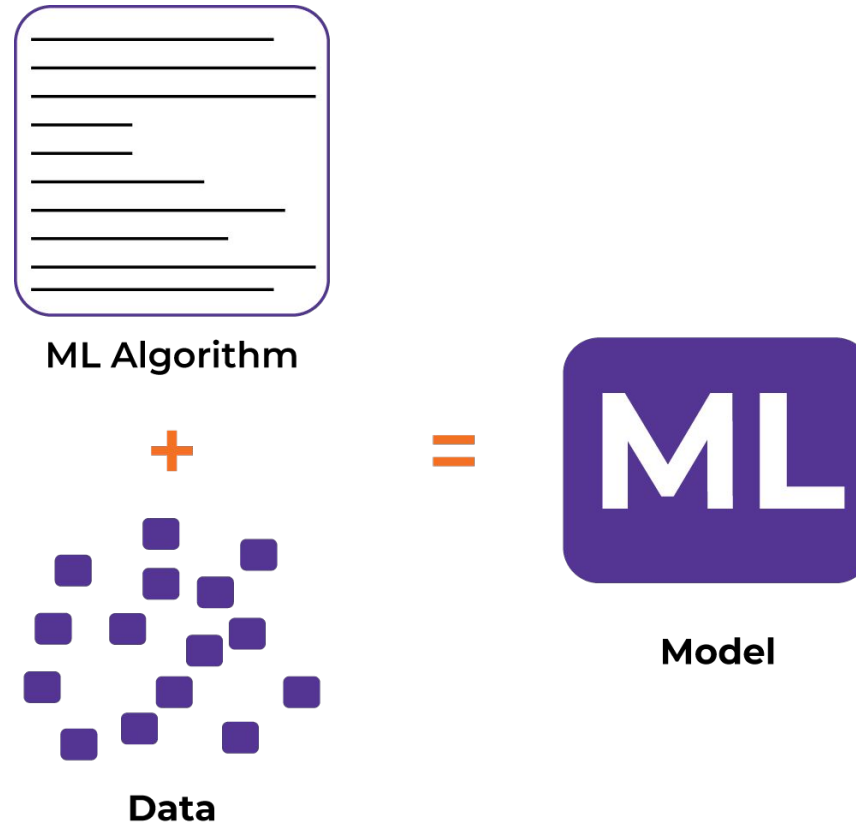
What is AI?

Use-case and **domain**
defines data and **algorithm.**



What is AI?

Model is **unique** to
business domain



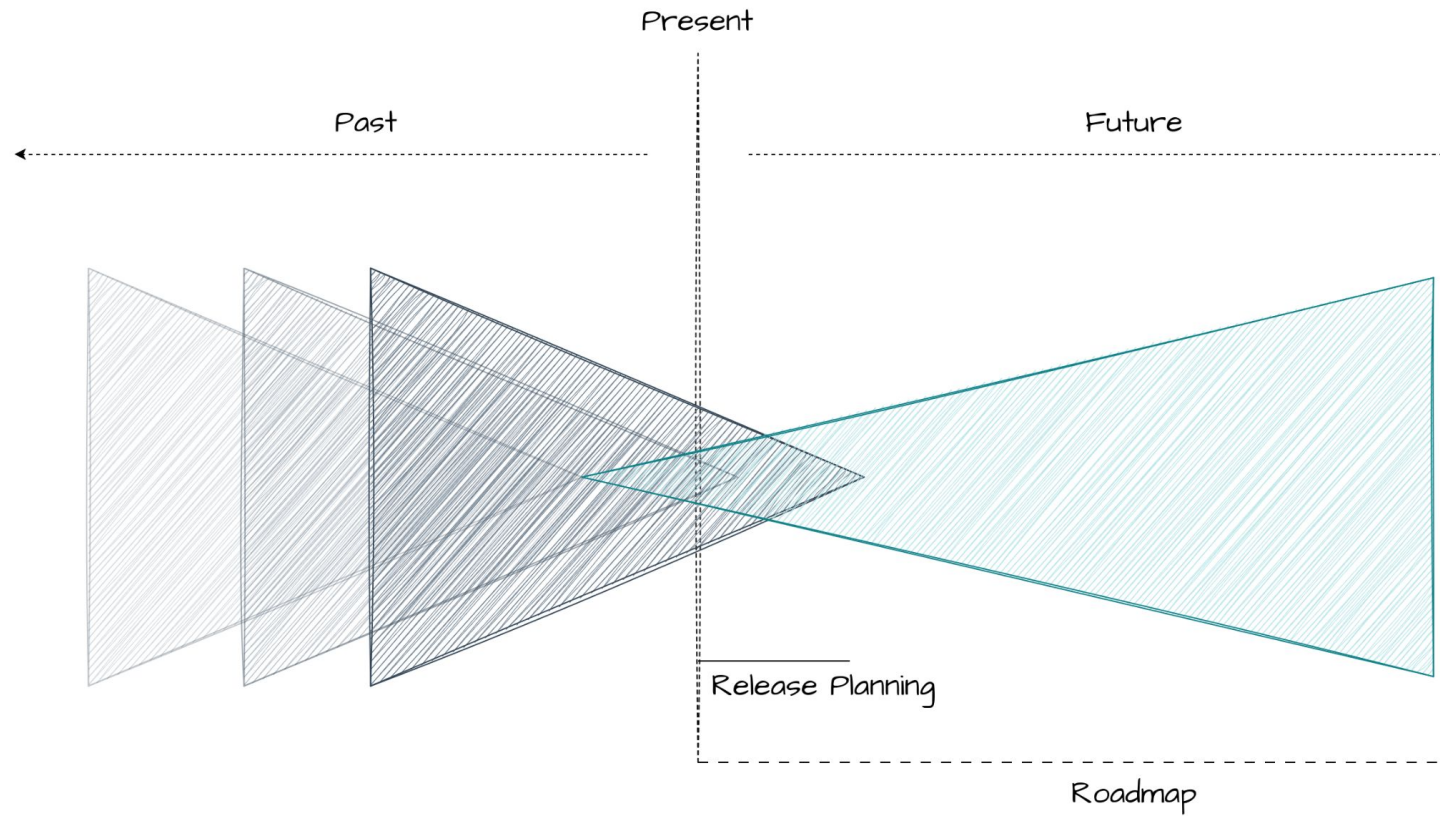
Data Strategy



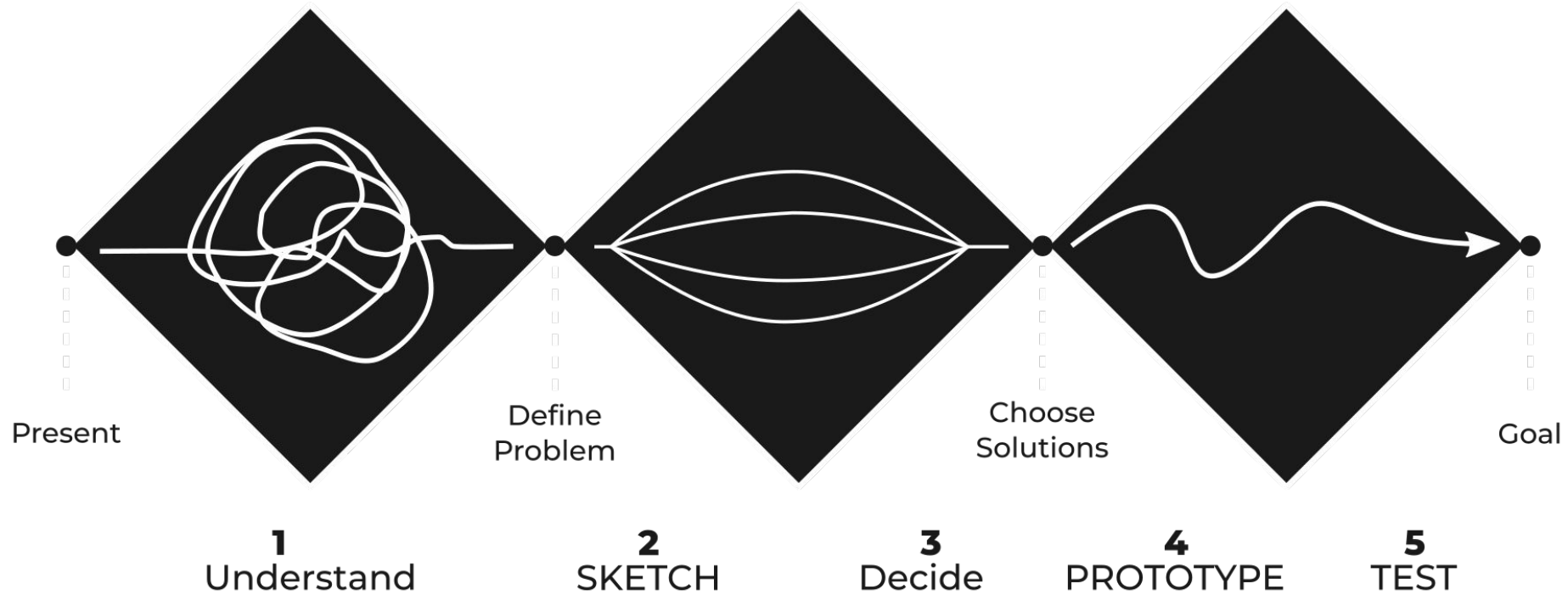
AI Strategy / Data Strategy



AI Strategy - Roadmapping



AI Strategy - Roadmapping



Roadmapping

Step 1



Knowledge
Share /
Education

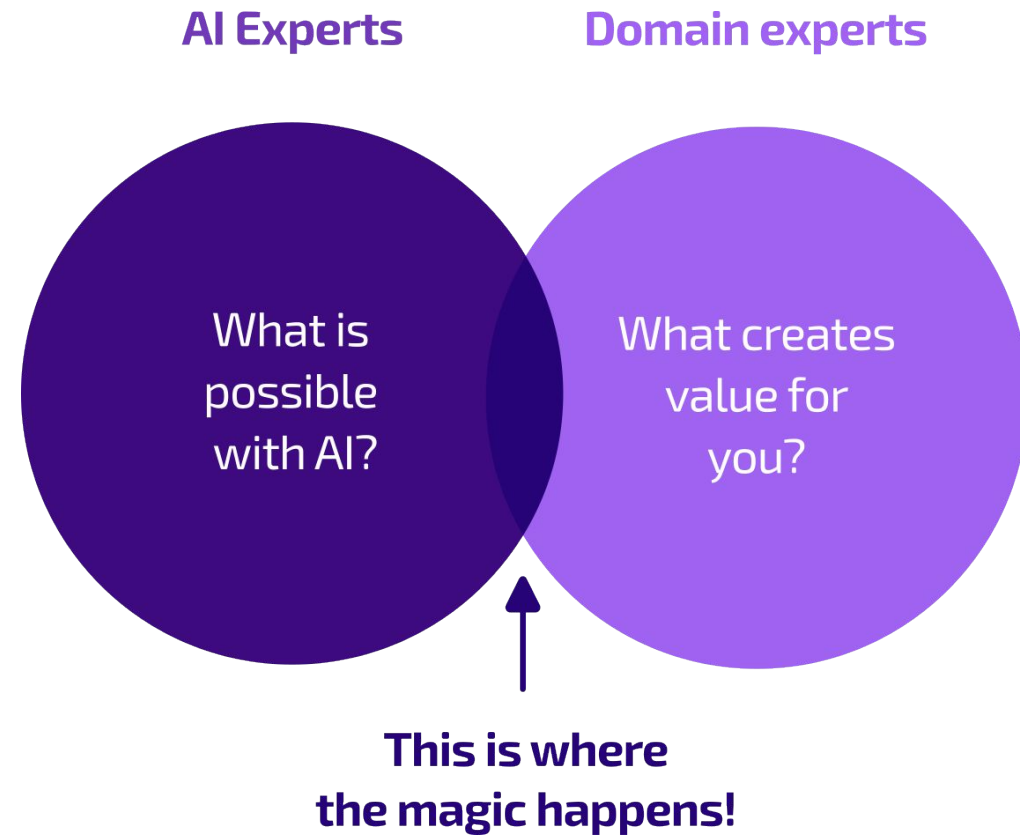
Roadmapping

Bottom-up Approach

Step 1



Knowledge
Share /
Education



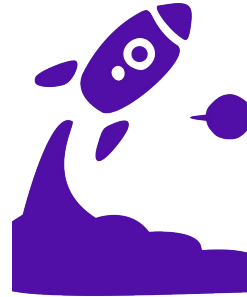
Roadmapping

Step 1



Knowledge
Share /
Education

Step 2



Identify
Use-cases

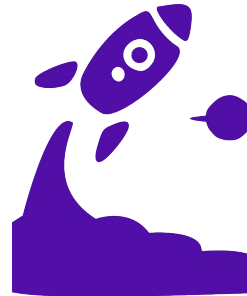
Roadmapping

Step 1



Knowledge
Share /
Education

Step 2



Identify
Use-cases

Step 3



Rate
Use-cases
and create
Roadmap

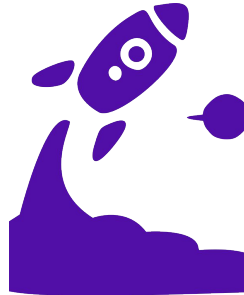
Roadmapping

Step 1



Knowledge
Share /
Education

Step 2



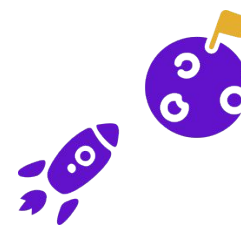
Identify
Use-cases

Step 3



Rate
Use-cases
and create
Roadmap

Step 4



PoC / Pilot
Project

Let's Dive into a Case

Case: OWLS

Optimal Vacuum Pan Vapour Level Setpoint



“Why have watchdogs
when you can get **OWLS**
on the watch!?”



Case: OWLS

Nordic Sugar - Nakskov, Denmark (Est. 1883)

Production campaigns lasts approx. 110 days and run 24/7 during this period

Production has undergone a significant digitization process

Vision to reduce emissions 70% by 2030

The goal with Project OWLS is to show data driven energy optimization using AI



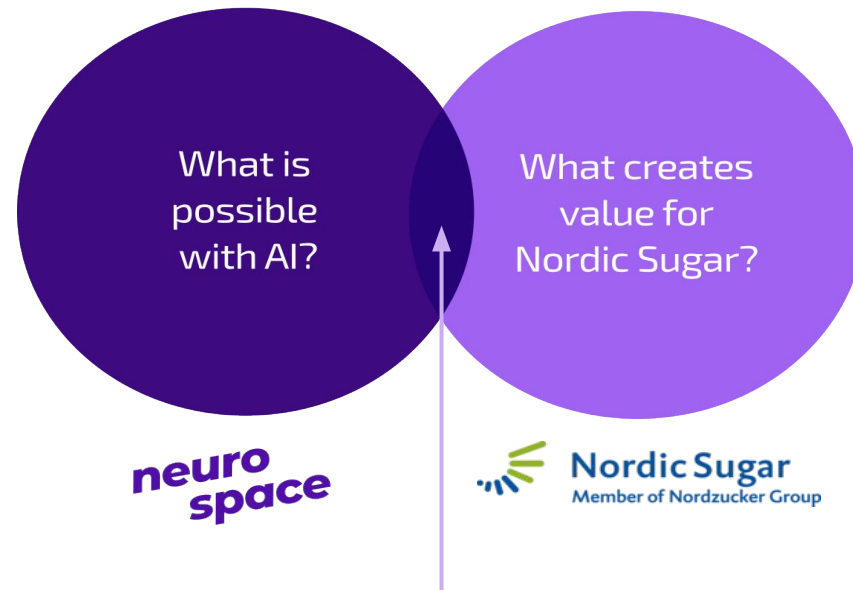


Case: OWLS

Collaboration is **Key**

AI Experts

Domain experts



This is where
Project OWLS happens!



Case: OWLS

Steam in vacuum pans to crystalize sugar

Vacuum is produced by condensing the steam from the outlet of the pan.

Steam pressures supplied in different steps (0-6) from the evaporator station

Step 4 - 110°C at 1.45 bara

Step 5 - 102°C at 1.10 bara

Average boiling time is 3,5 hours

Case: OWLS

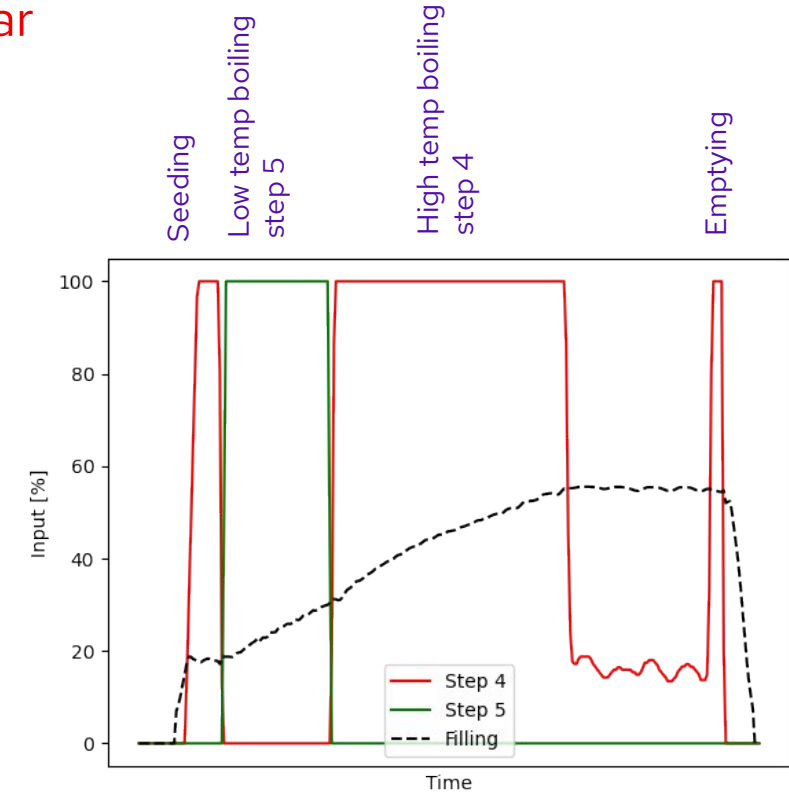
Data Analysis at Nordic Sugar

Very **experienced** in handling data

Data quality was very **high**

Clear signs of **bias** in the data

Ten **feature points** identified

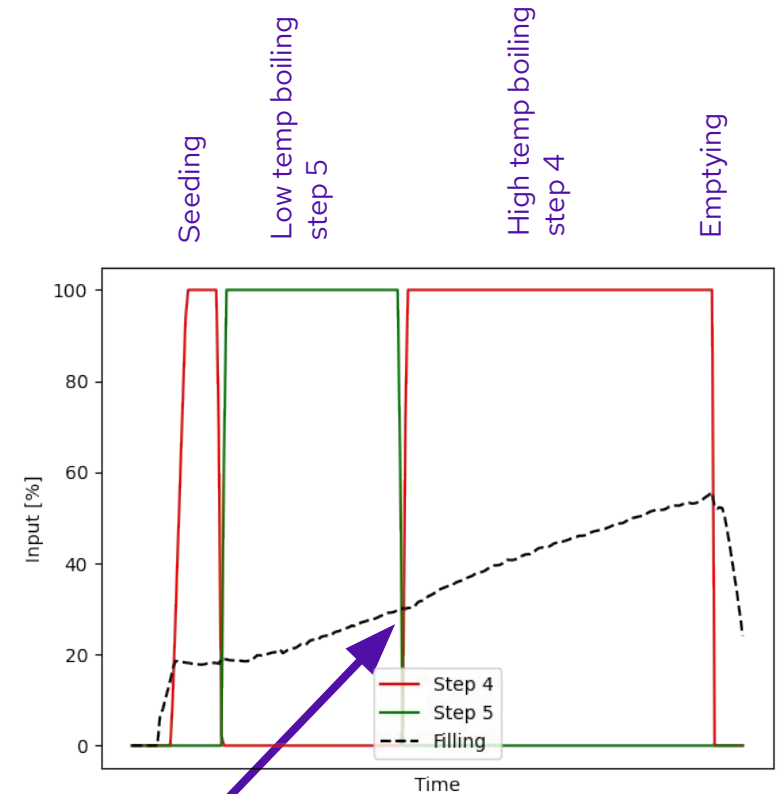


Case: OWLS

Solution on-prem

OWLS can simulate the effect generated by step 5 and predict when the swap between step 5/4 is needed based on the filling level of the pan.

Estimated optimization potential after implementation is between **7%-43%** increased **step 5** steam.



OWLS prediction

Case: OWLS

Results

34 days

Tested on two of vacuum pans

39,8 % optimization

During the test period, as shown by results.

266% more activity

Operators increased changes in set points from 30 to 80 changes during the test period, compared to prior compagins.

3000+ liters of diesel

Estimated reduced fuel during a production campaign on **each** vacuum pan (out of 26 in total in Nakskov).

Case: OWLS

What did we learn?

*This is just the beginning of
data driven optimization*

No **business case**, no **project**

Team composition is crucial for any successful implementation

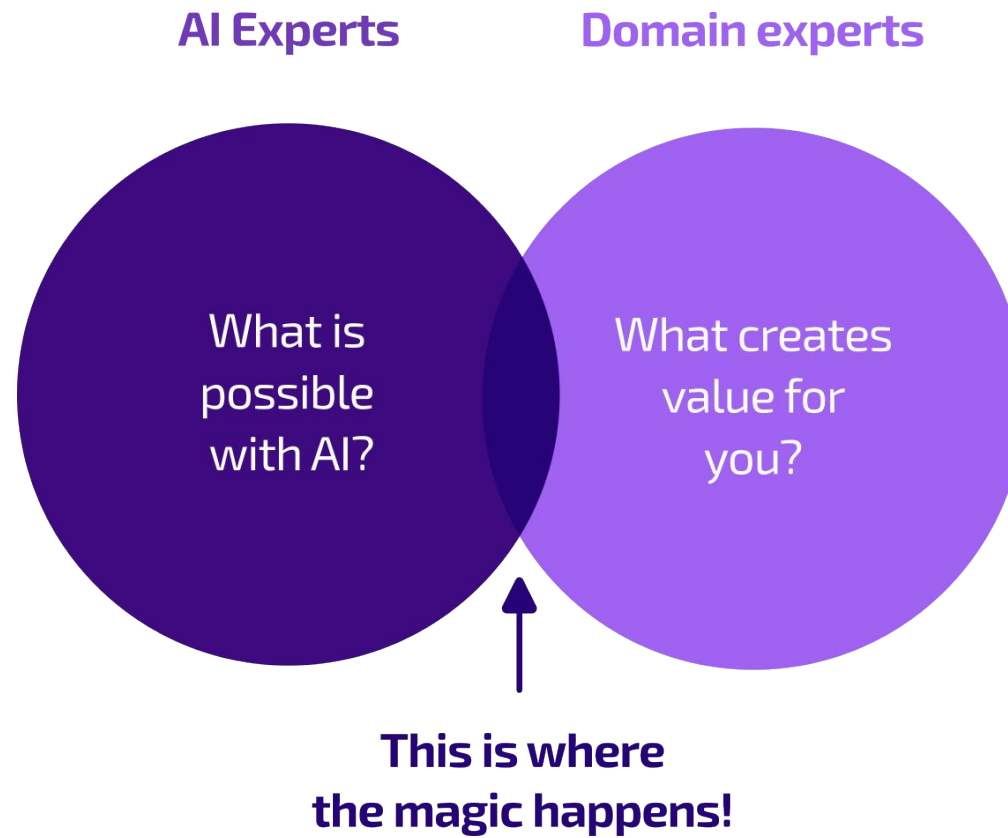
It is crucial that **operators** are involved in the project to establish trust

Data is most likely **biased** if human decision making is involved

The **full potential** of OWLS is **unlocked** with a complete automation of changing set points.

Project lasted **3 months** and was **within budget** with a great **return on investment**

4 Key Learnings



4 Key Learnings

UNACCEPTABLE RISK

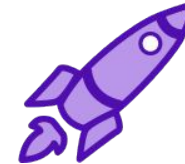
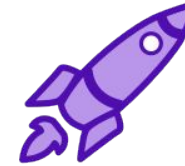


HIGH RISK

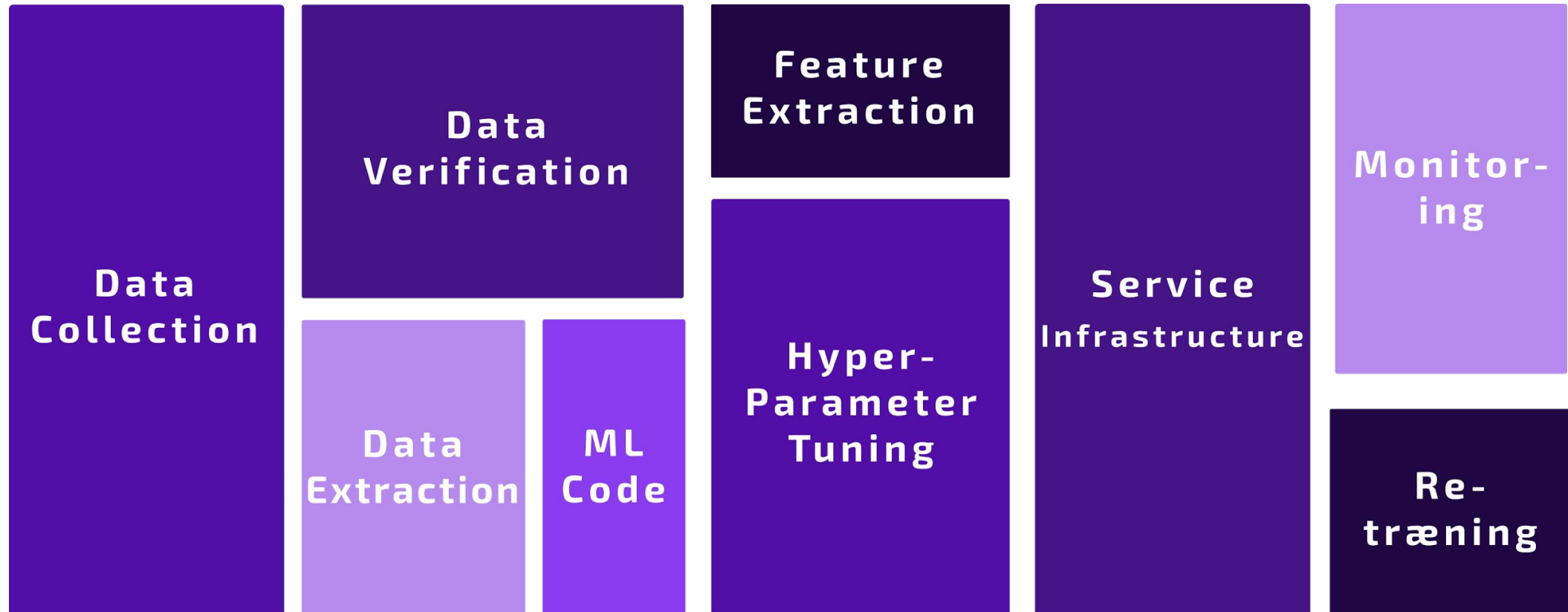
LIMITED RISK

MINIMAL RISK

4 Key Learnings



4 Key Learnings



What is your next steps?

Learn how to maximize your technology investments



Establish AI Strategy

AI Navigate

Align AI innovation with you business goals

Outcomes:

- Initial scope and priorities for the AI Strategy
- Outlined AI Strategy for implementation of a solution with dependencies identified e.g. security, automation, operations, storage etc.
- Executive presentation



Idea to prototype

AI Incubator

Upskill your AI team for Gen AI use cases

Outcomes:

- Prototype custom GenAI solution
- Release solution in your environment
- Learn AI Engineering skills and tooling
- Establish foundational MLOps best practices and skills



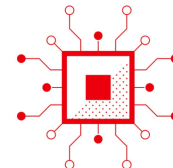
Build to refine

AI Platform Foundation

Rapidly deploy and adopt Red Hat AI Platform while advancing your AI practices:

Outcomes:

- Upskill customer's ML Platform team and data scientists
- Help customers adopt new AI capabilities
- Layout future roadmap of skills and capabilities
- Increase teams core MLOps competency



Operationalize to scale

MLOps Foundation

Roll out automated MLOps pipelines and practices throughout your organization

Outcomes:

- Establish self-service of MLOps platforms
- Automate and template ML pipelines
- Establish patterns and best practices for managing production ready solutions



Red Hat
Summit

Connect

Thank you



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