



SAP Community  
Anniversary

**SAP TechEd:** <https://www.sap.com/events/teched.html>

November 2-3, 2023

- SAP TechEd Bangalore
- SAP TechEd Virtual



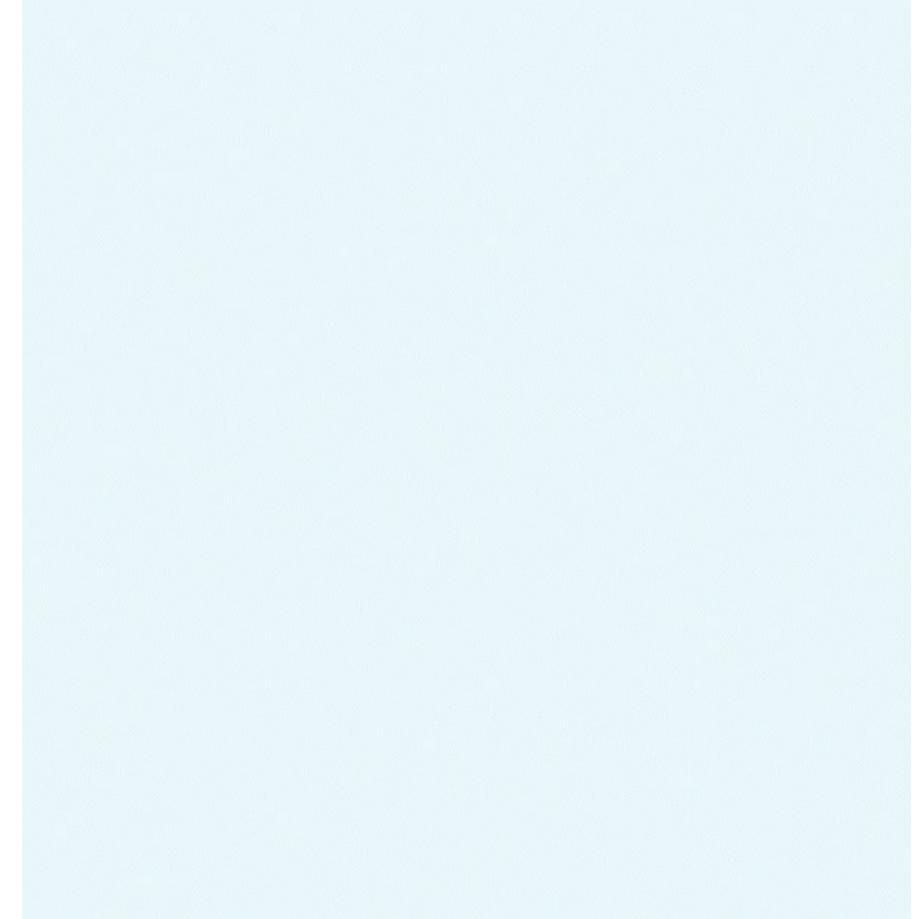
**SAPinsider Innovation & Technology Summit 2023:**  
<https://sapinsider.org/events/sapinsider-2023-technology-summit/>

14-16 November | Copenhagen

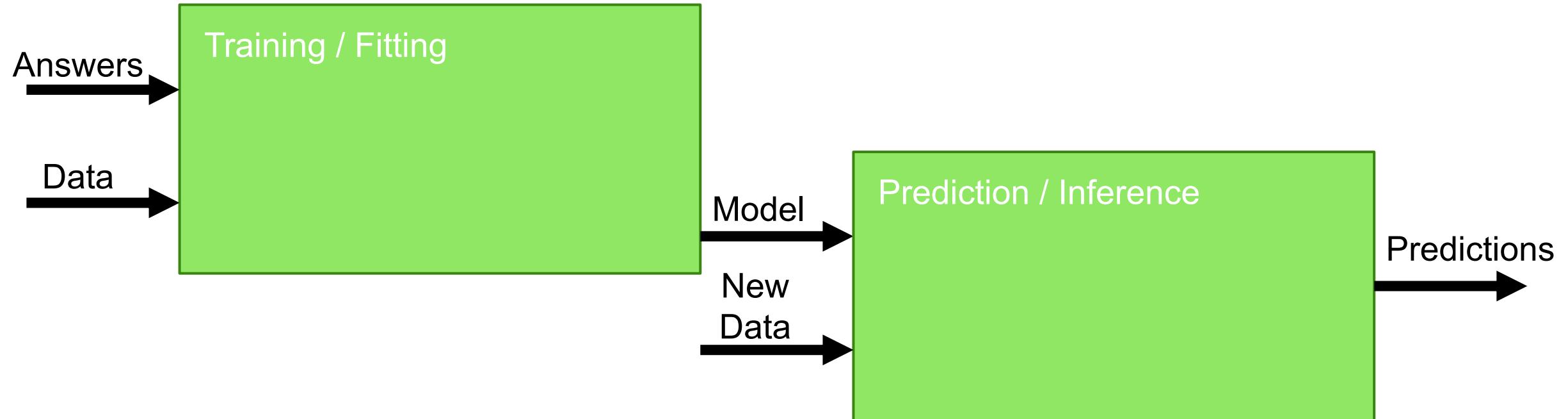
# Devtoberfest: <https://developers.sap.com/devtoberfest.html>

September 18 – October 13, 2023

- ABAP & CAP
- Low-code/No-code
- Data, Analytics, & AI
- User Interface
- Integration Suite



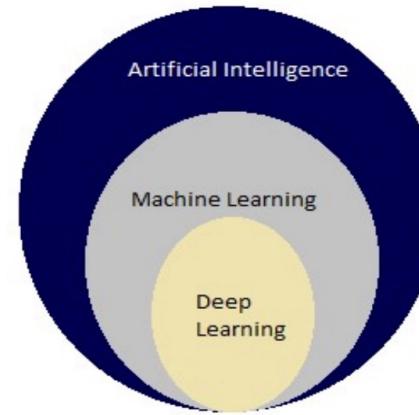
# Machine Learning



# Machine Learning Terminology

## III. Artificial Intelligence vs. Machine Learning vs. Deep Learning

In the research of big data, ML and AI are used conversely. But they are not same, it is essential to understand, how ML and AI are enforced differently.



**Fig.2:** AI vs. ML vs. DL

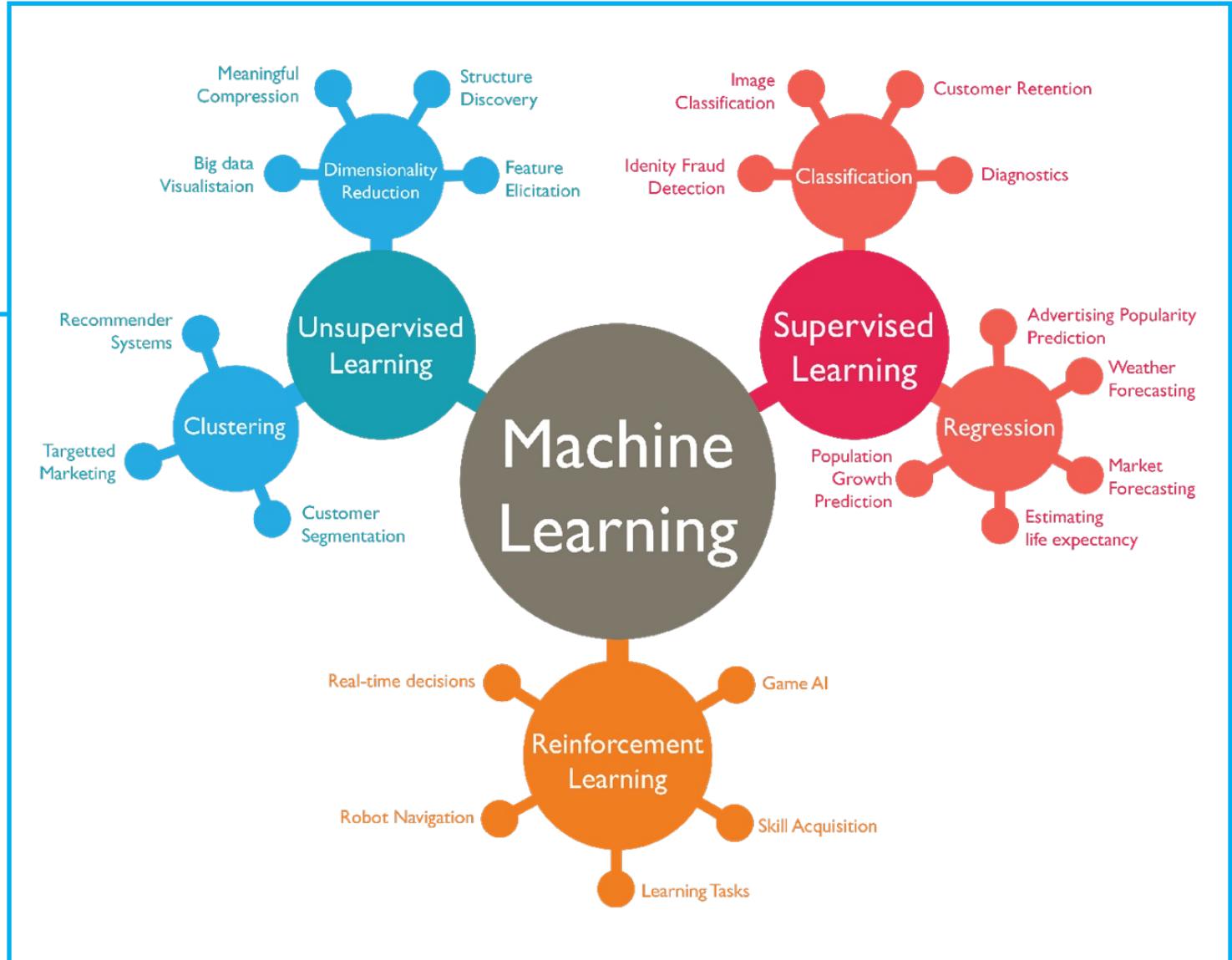
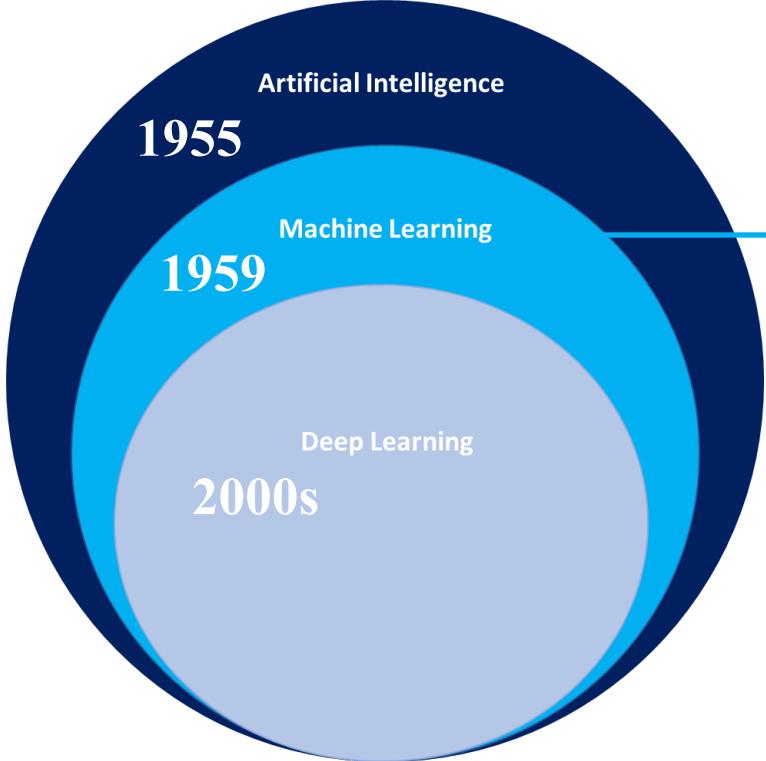
### Artificial Intelligence and Machine Learning :

AI is a wider research area than ML, which refers to the use of machines to imitate the functions of brain. AI makes the computers/devices to perform tasks in a “smart” way based on algorithm. While ML is a part of AI, ML focuses on machines’ ability to abstract and generalized the data as they alter the algorithm based on the data it is processing. ML algorithms can be used to prepare the machines to think like humans.

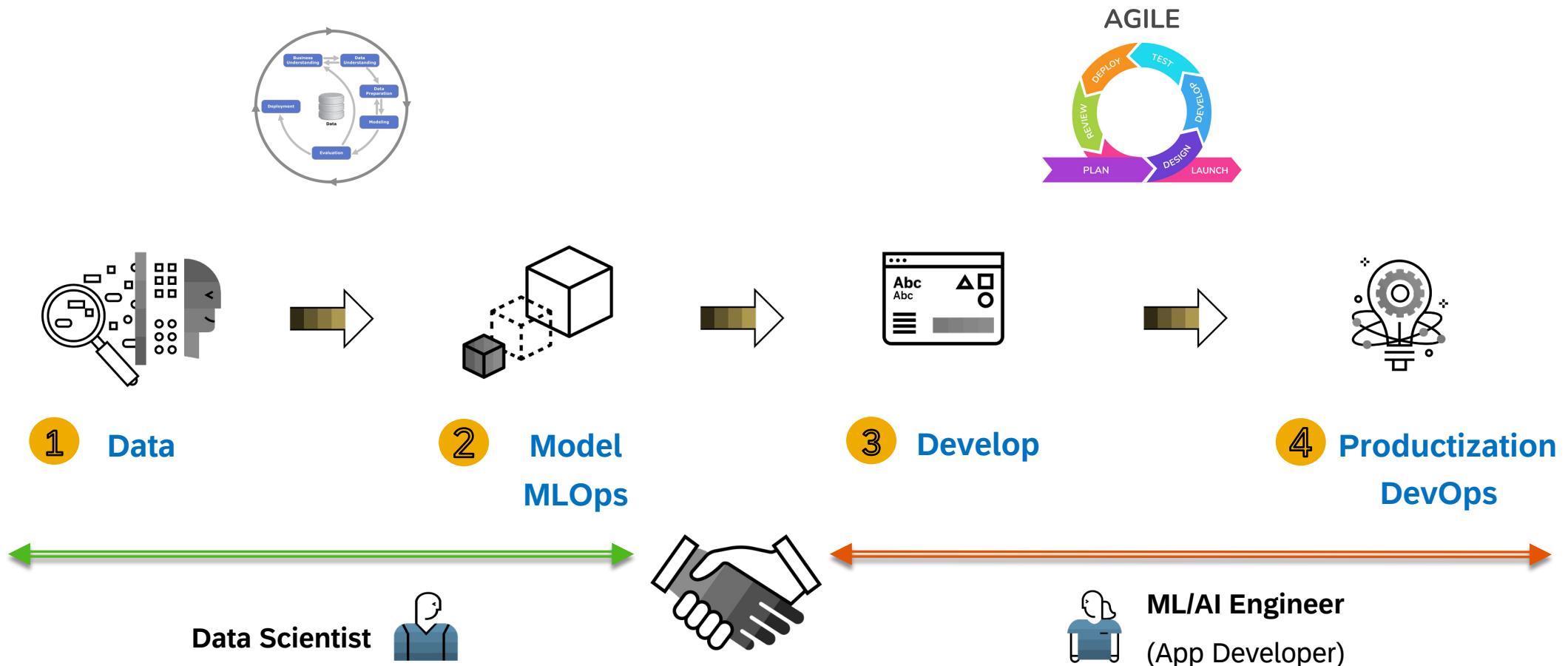
### Deep Learning:

Deep Learning (DL) is a subfield of ML concerned with algorithms imitates the structure and function of the human brain. DL goes further deeper than ML. DL networks need to review large quantity of data-items. To get trained, instead of programming, the machine is exposed to millions of data. DL need not to programmed, they have to identify the edges when exposed to new data.

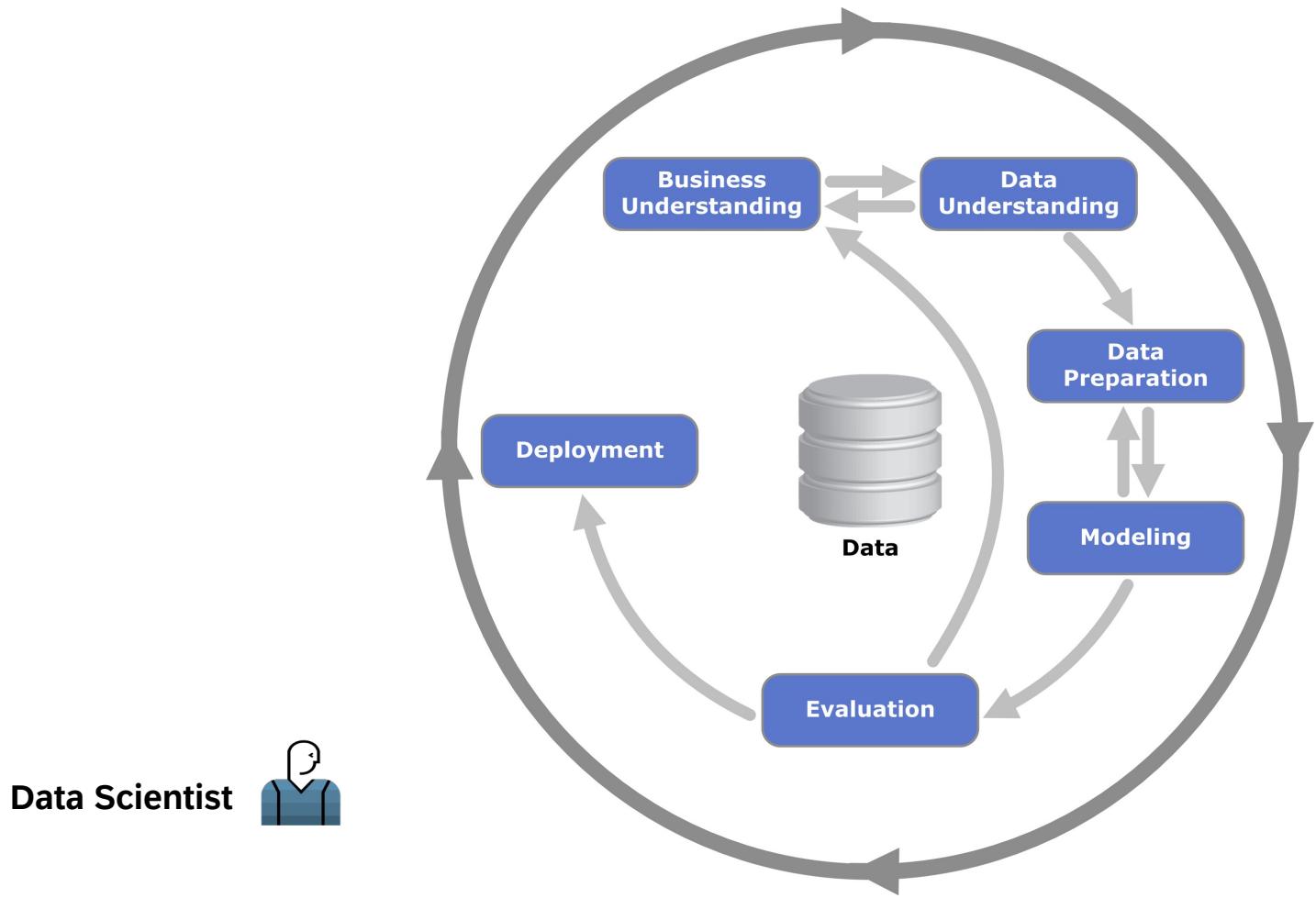
# Machine Learning Terminology



# Development Approach | Building an Intelligent Data Application



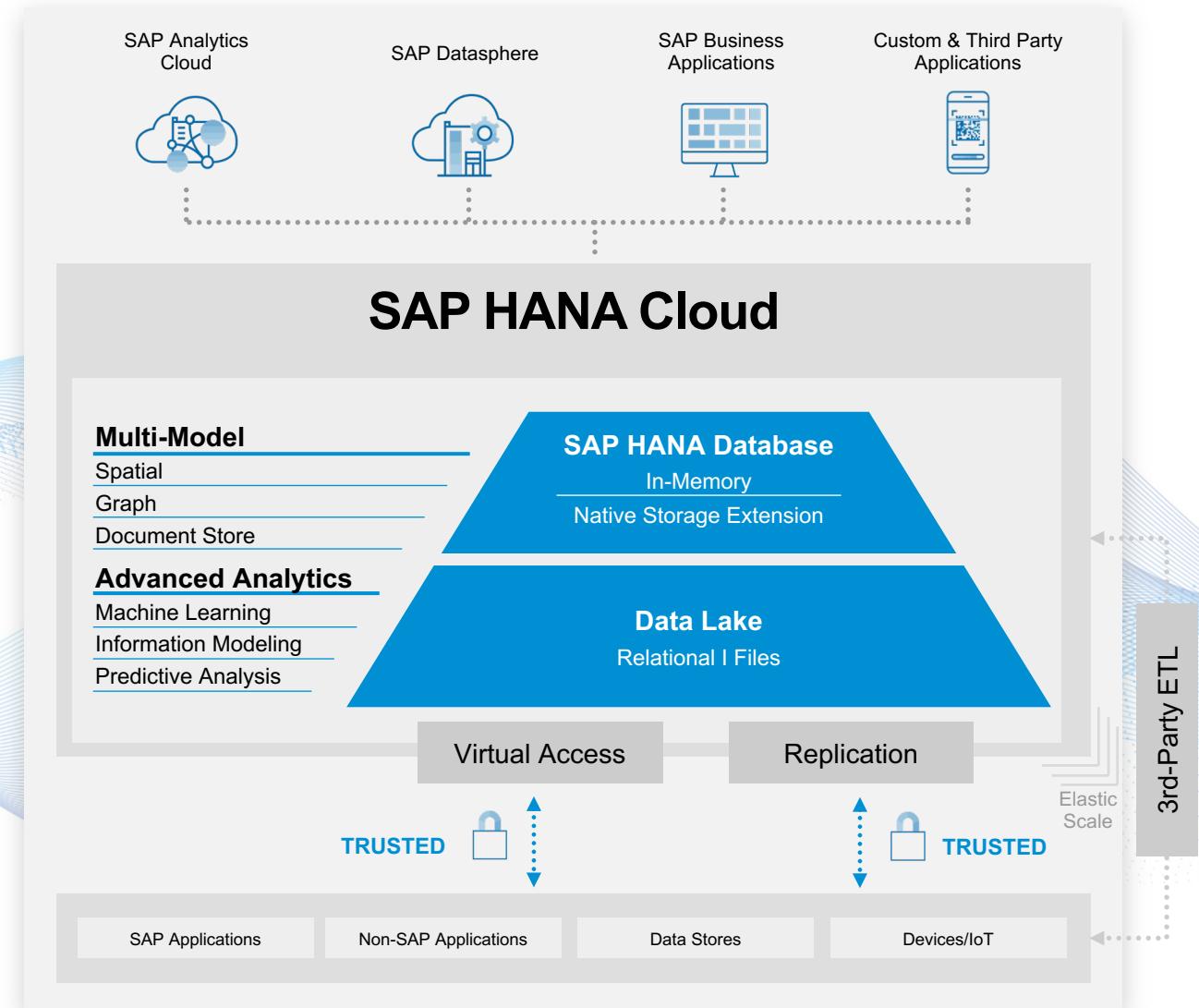
# Development Approach | Training a Model



# SAP HANA Cloud | Foundation for Intelligent Data Applications on SAP BTP

## Power Intelligent Data Applications with SAP HANA Cloud

- Running mission-critical applications and analytics with **one solution**
- Seamlessly blend **multi-model data** to enhance business processes
- Federate data **across hybrid systems** and multiple clouds
- Provide **proven in-memory performance** for all data needs



**Repo:** <https://github.com/SAP-samples/hana-ml-py-codejam/>

(→ [https://bit.ly/CJ\\_HANAML](https://bit.ly/CJ_HANAML))

## **1. Pre-requisites:**

<https://github.com/SAP-samples/hana-ml-py-codejam/blob/main/prerequisites.md>

## **2. Exercises:**

<https://github.com/SAP-samples/hana-ml-py-codejam#the-exercises>

## **3. Worth watching:**

<https://github.com/SAP-samples/hana-ml-py-codejam#overview-sessions>

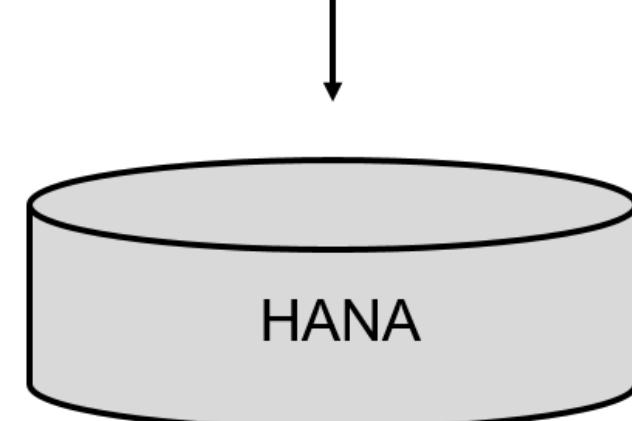
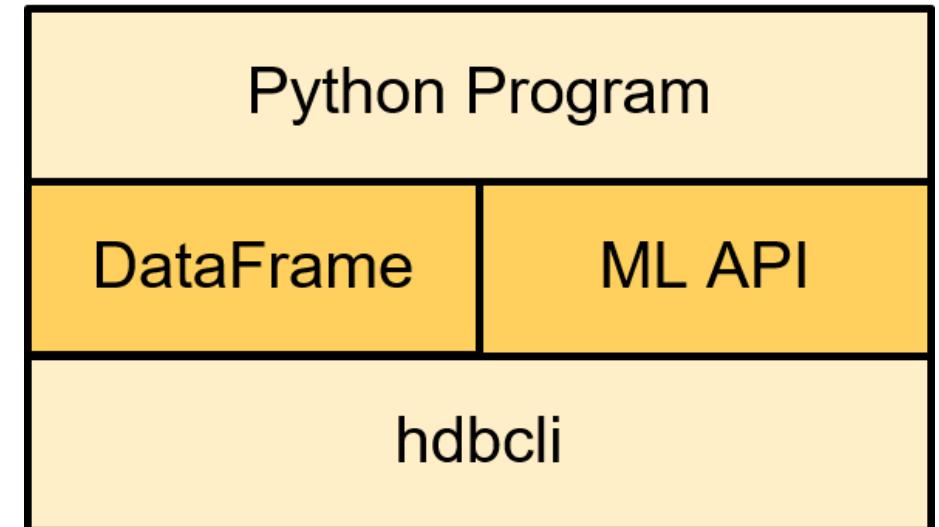
## **4. Try at home in your SAP BTP Trial:**

<https://github.com/SAP-samples/sap-community-developer-challenge-eda-hana>

# Understand DataFrame(s)

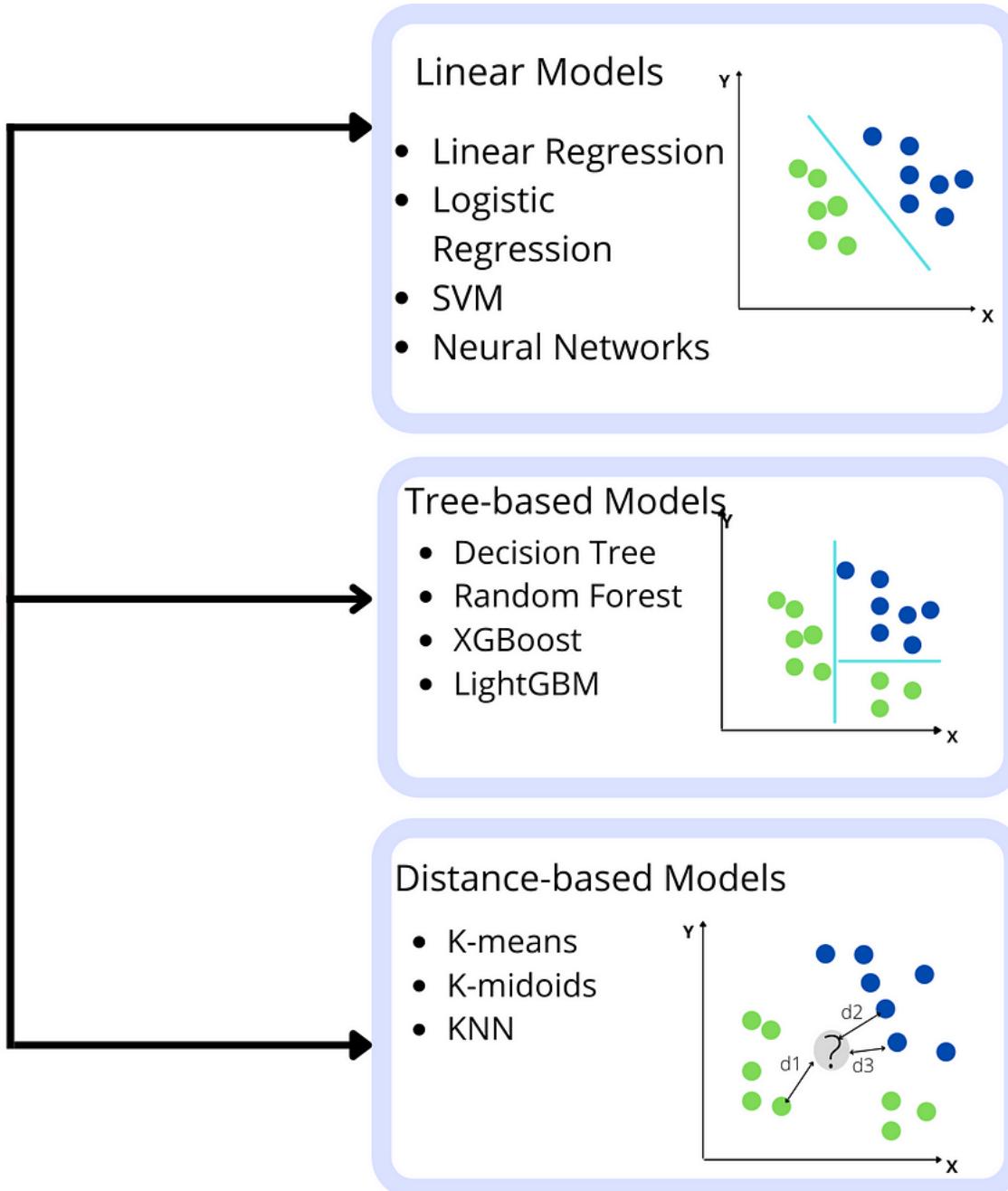
# Data Scientist using Python

Pandas DataFrame <> HANA DataFrame

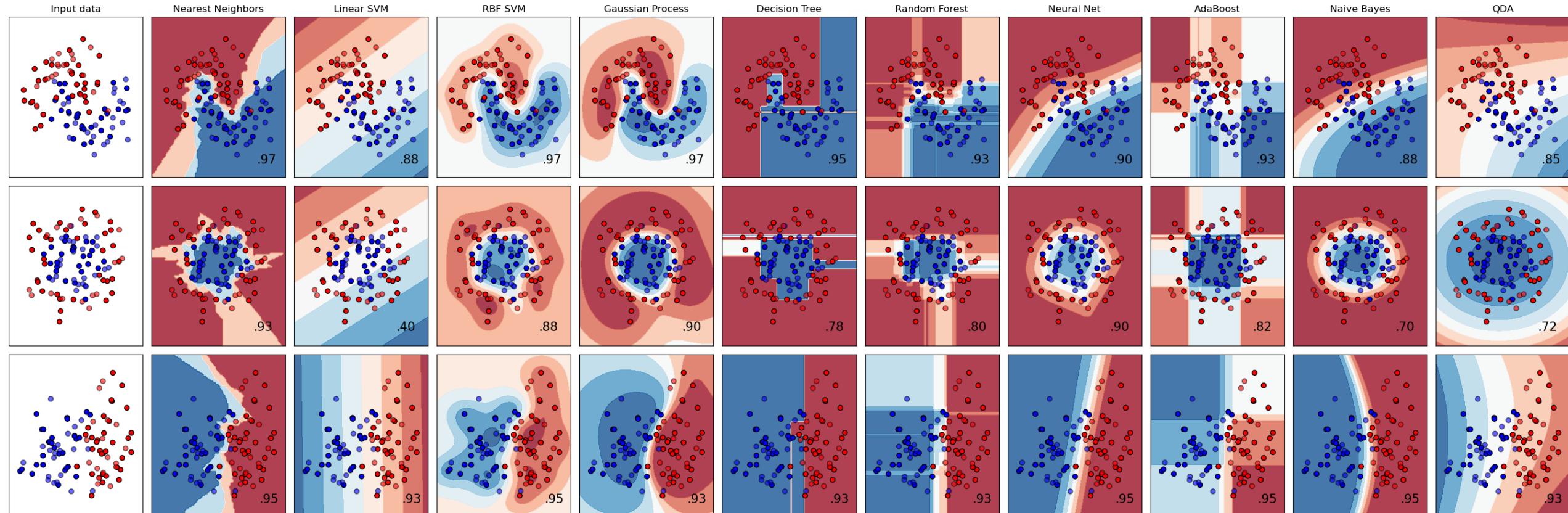


# Decision Boundary

Decision  
Boundary

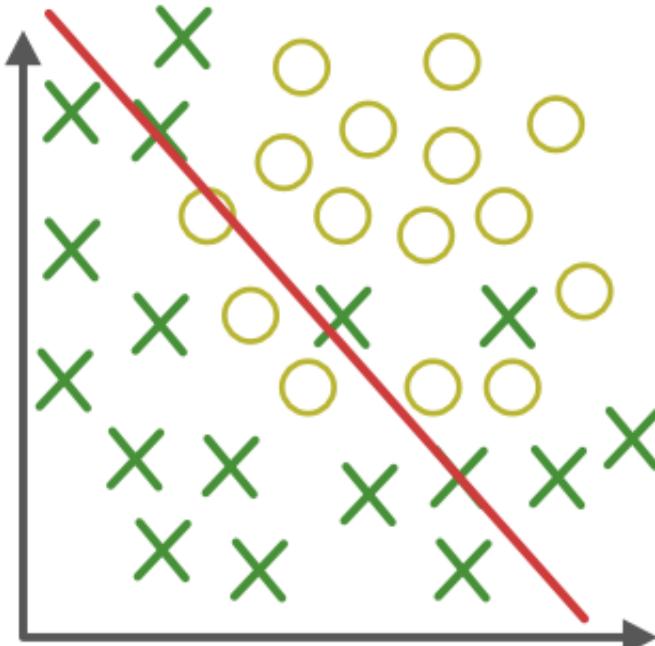


# Decision Boundary (different algorithms)

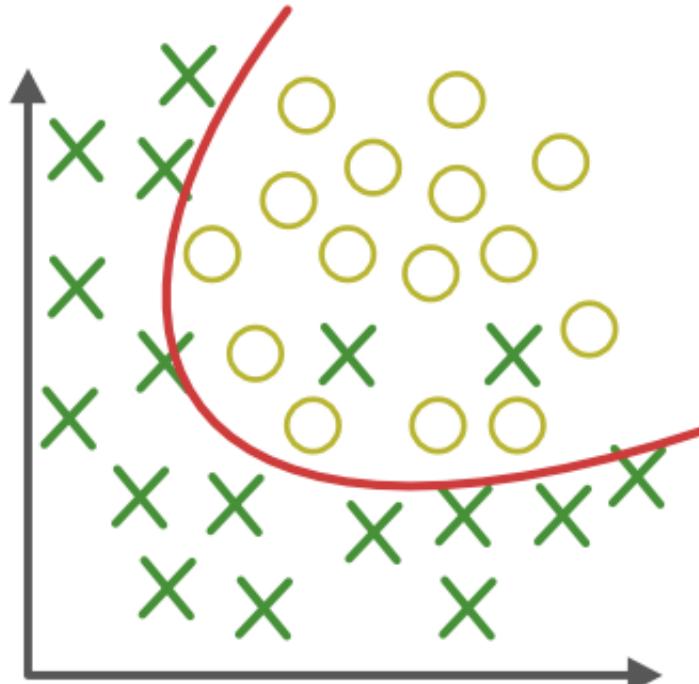


[https://scikit-learn.org/stable/auto\\_examples/classification/plot\\_classifier\\_comparison.html](https://scikit-learn.org/stable/auto_examples/classification/plot_classifier_comparison.html)

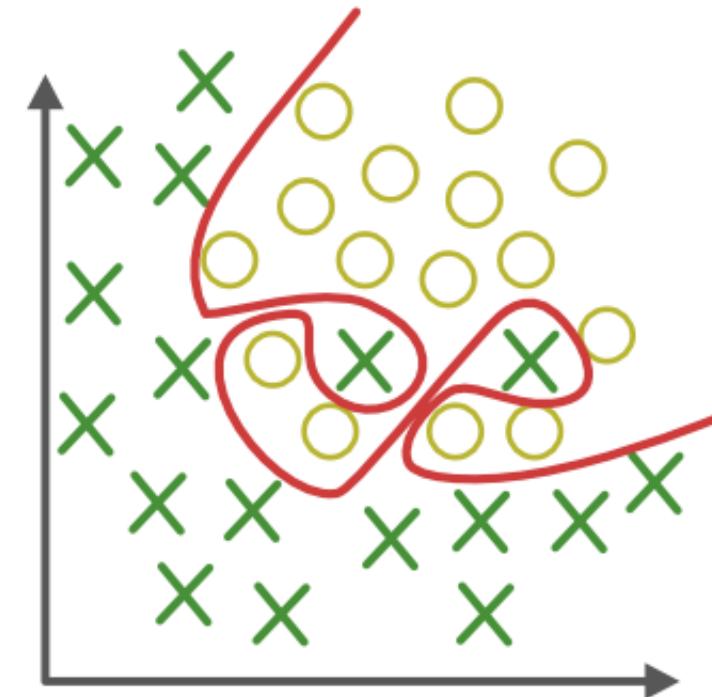
# Underfitting and Overfitting



**Under-fitting**  
(too simple to  
explain the variance)



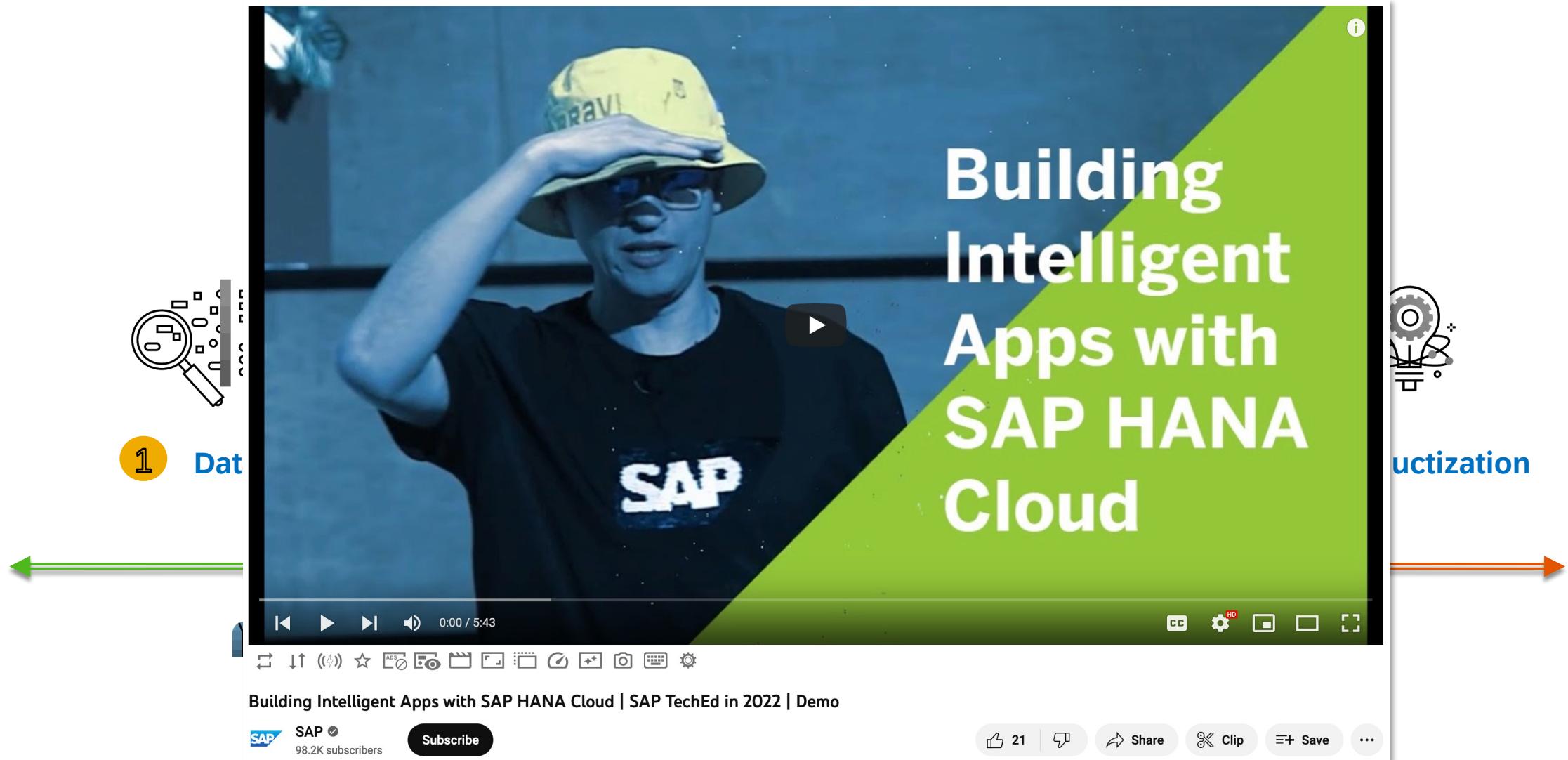
**Appropriate-fitting**



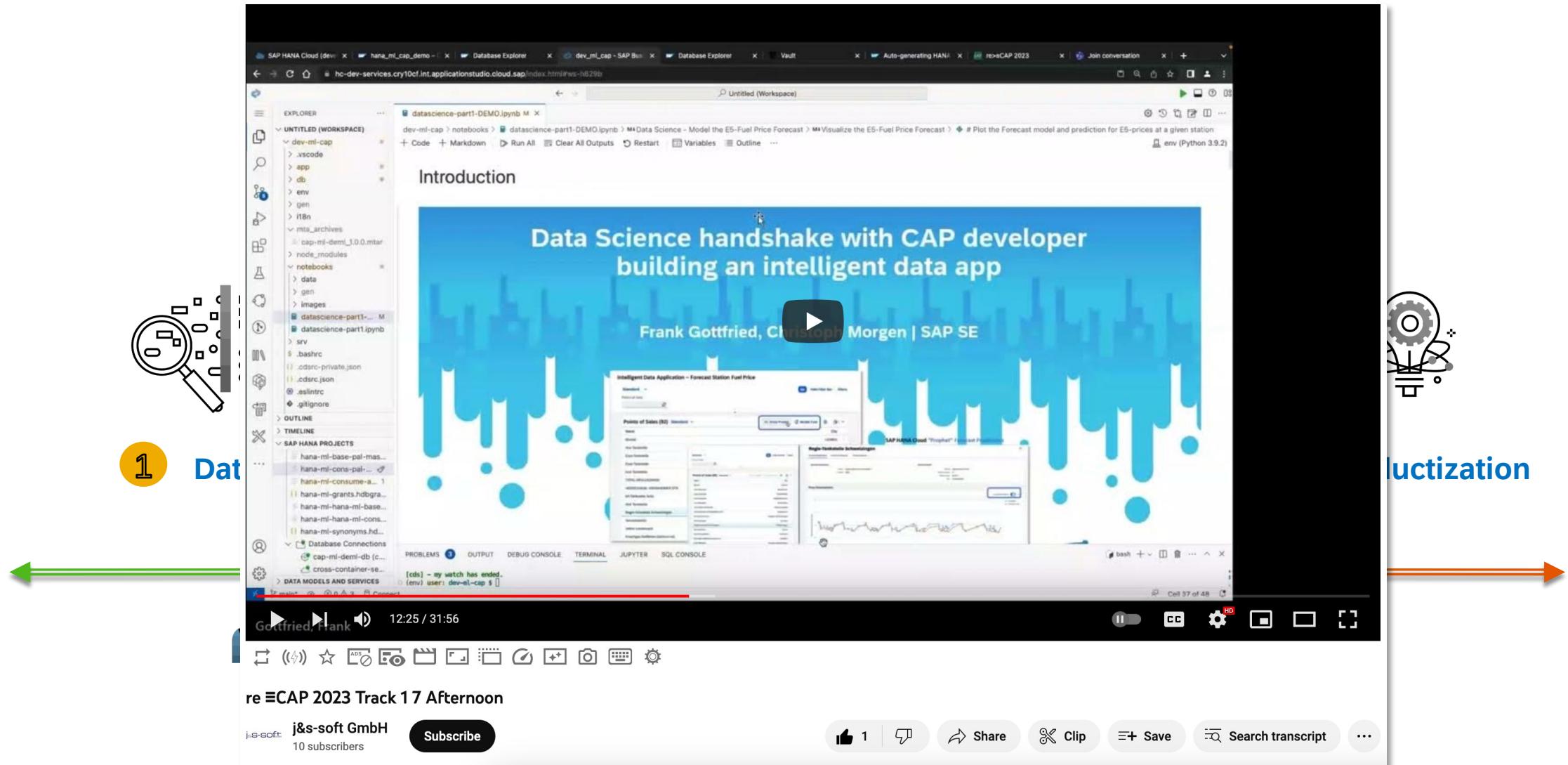
**Over-fitting**  
(forcefitting--too  
good to be true)

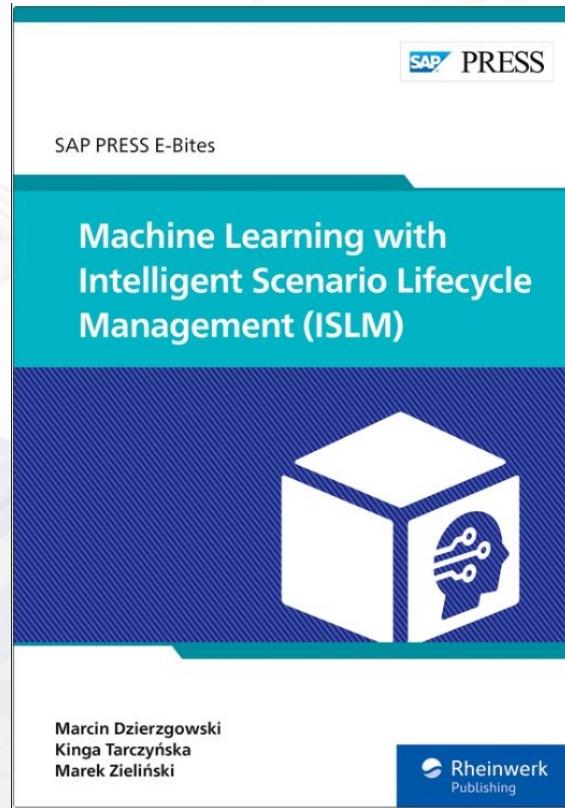
DG

## Development Approach | Building an Intelligent Data Application (demo)



# Development Approach | Building an Intelligent Data Application (demo)





## Machine Learning with Intelligent Scenario Lifecycle Management (ISLM)

115 pages, 2023, E-Book  
ISBN 978-1-4932-2395-4

[www.sap-press.de/5668](http://www.sap-press.de/5668)

## Update your machine learning skills with Intelligent Scenario Lifecycle Management (ISLM)!

In this E-Bite, you'll develop a complete machine learning application for SAP S/4HANA using SAP HANA PAL, from data preparation and model building to training and prediction generation. You'll learn to use the ISLM framework to simplify machine learning implementation with standard apps for managing intelligent scenarios. Learn the ins and outs of machine learning with ISLM in this how-to guide!

- Learn to use the ISLM framework in SAP S/4HANA
- Develop an end-to-end machine learning scenario with SAP HANA PAL
- Prepare data, train models, and implement predictions with ISLM

# SAP Business AI approach

Relevant. Reliable. Responsible.

Finance | Supply Chain | HR | Procurement | Marketing and Commerce | Sales and Services | IT



A copilot that truly understands your business

## Embedded AI capabilities

Cloud ERP

Human capital management

Spend management  
and business network

Customer relationship  
management

Business Technology  
Platform

## AI Foundation

on Business Technology Platform

## AI ecosystem partnerships and investments



ANTHROPIC



cohere

databricks

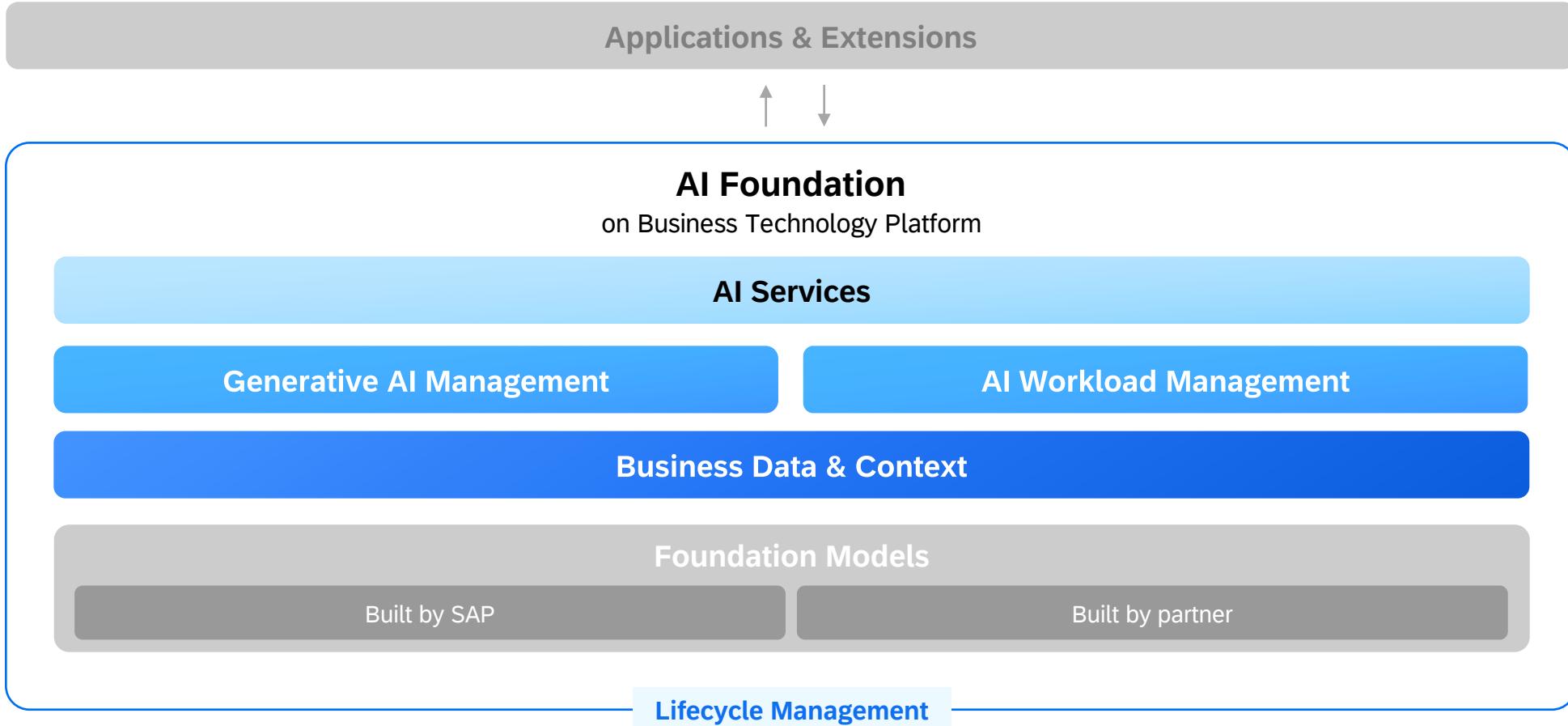
DataRobot

Google Cloud

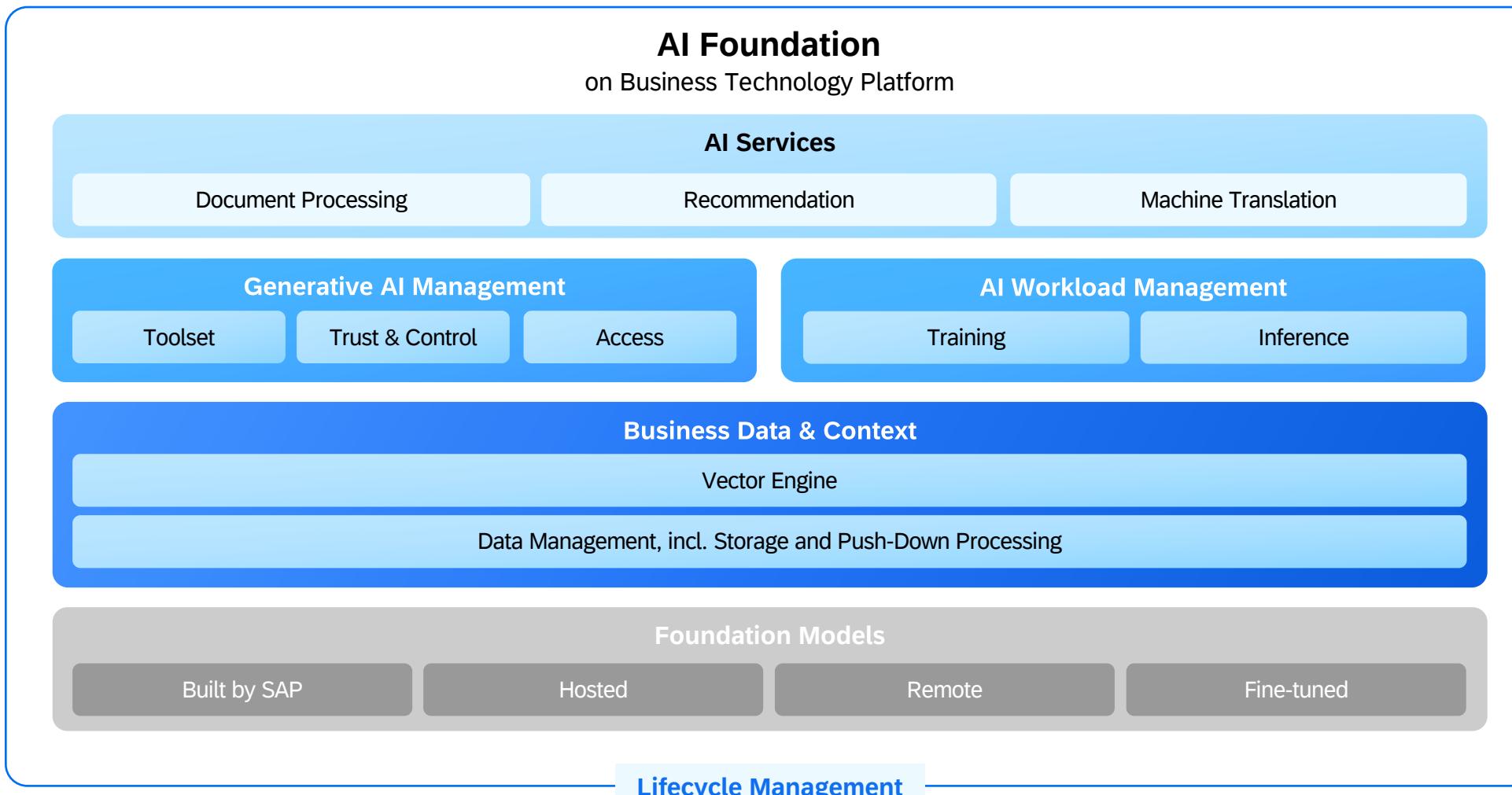
IBM

Microsoft

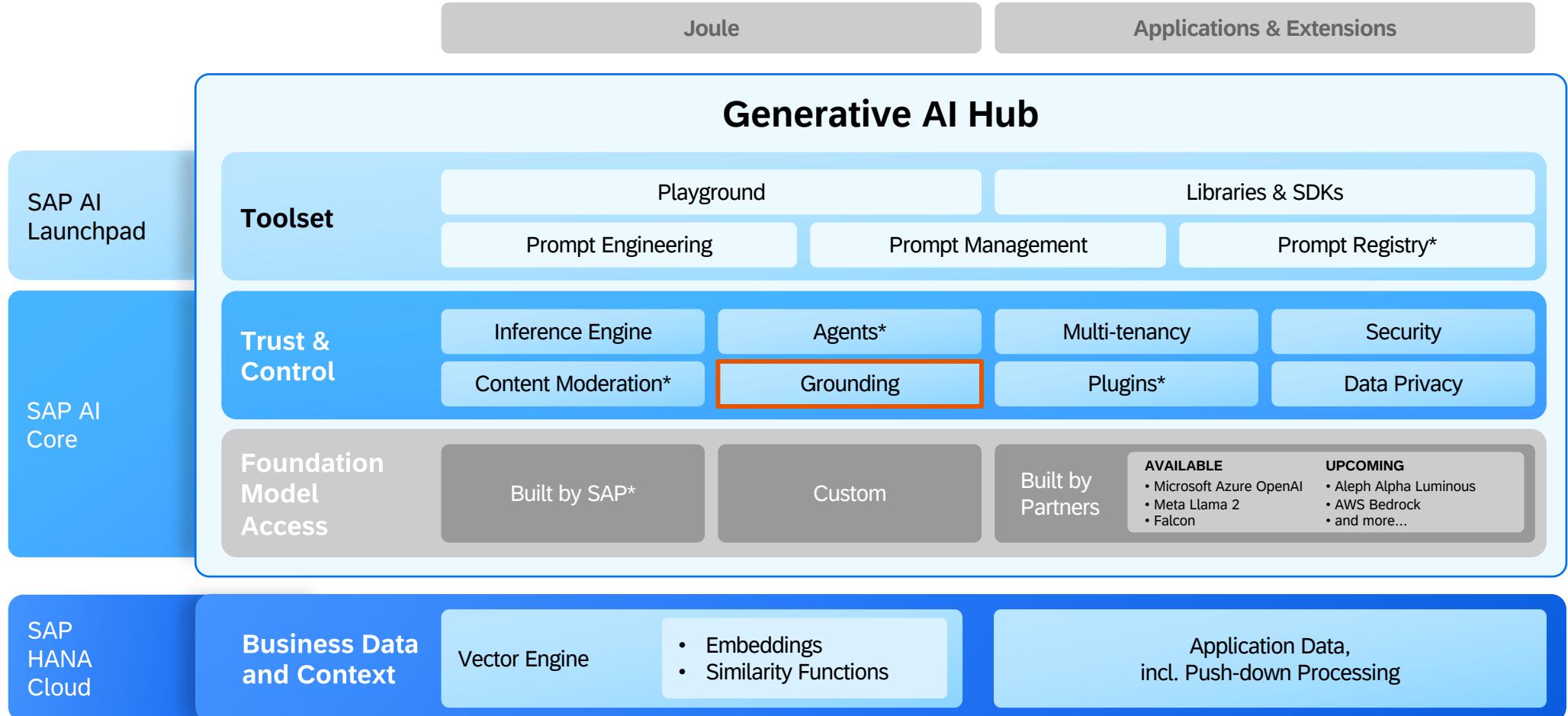
# A complete set of services for AI developers on SAP BTP



# A complete set of services for AI developers on SAP BTP



# Generative AI Hub: integrate AI into applications, seamlessly



# Thank you!

Contact information:

Witalij Rudnicki

<https://people.sap.com/vitaliy.rudnytskiy>

