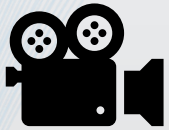
Intellect and Intelligence

Before We Get Started



Recording

A link to the recording and slides will be emailed to all registrants.

Recording

Type in the question box, and we will answer in real time or during the Q&A.

Social

Follow us on LinkedIn, Facebook, Youtube, and/or Instagram or visit blackhills.ai to see upcoming and on-demand webinars.

Panel

Jim Hallenbeck

Chief Executive Officer and President, Black Hills AI

Thomas Marlow

President, Black Hills Renewals
Chief Technology Officer, Black Hills AI

Manjeet Rege

Director of Center of Applied Artificial Intelligence and Professor, University of St. Thomas
Advisor to Black Hills AI

Jay Madheswaran

Founder and CEO, Eve

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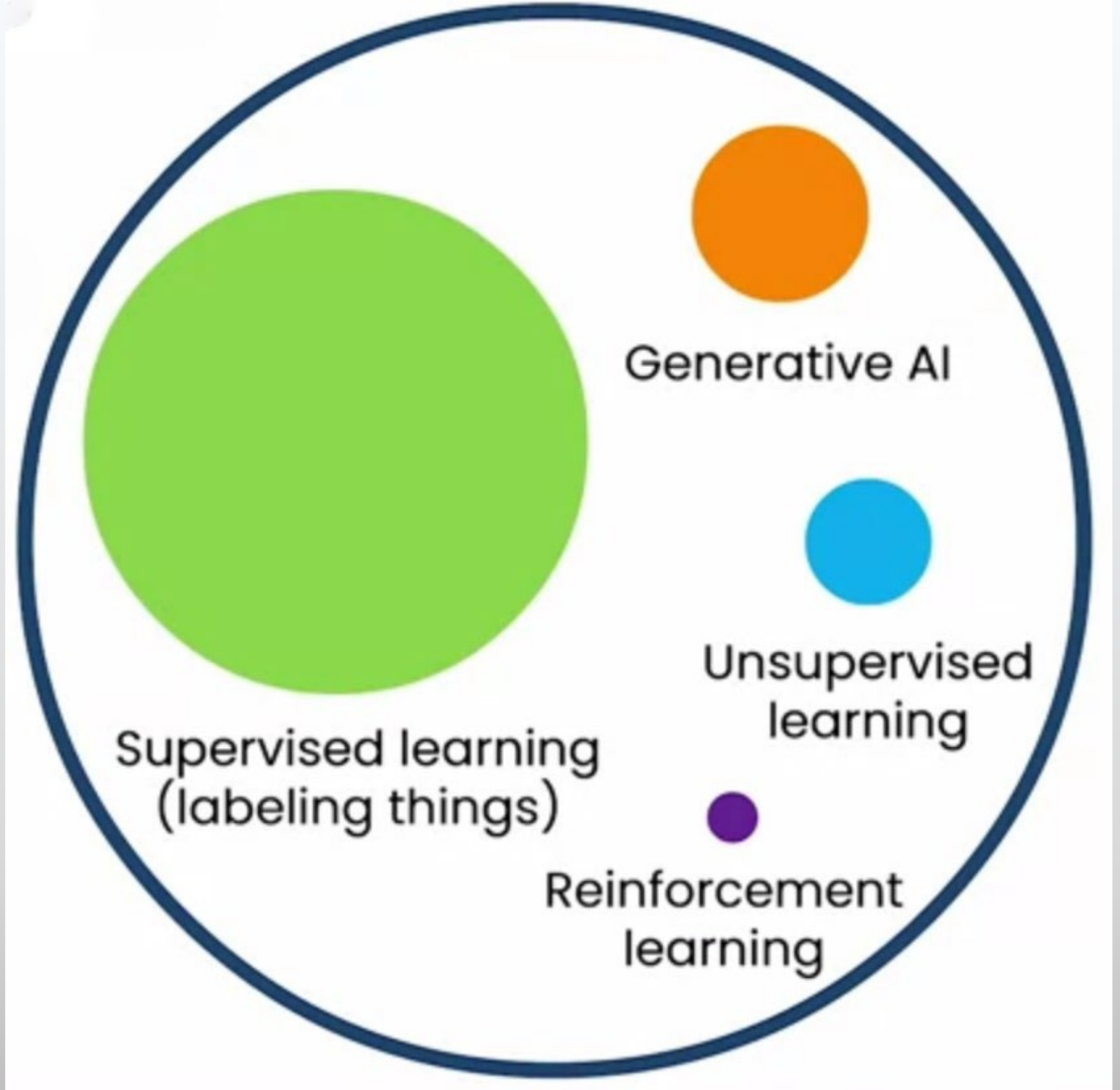
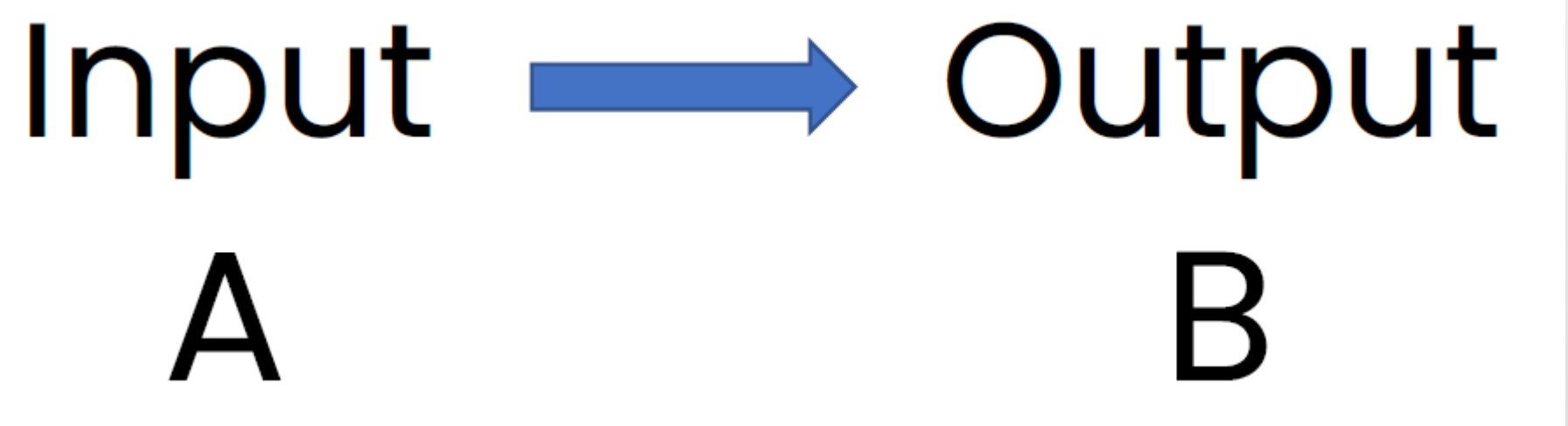
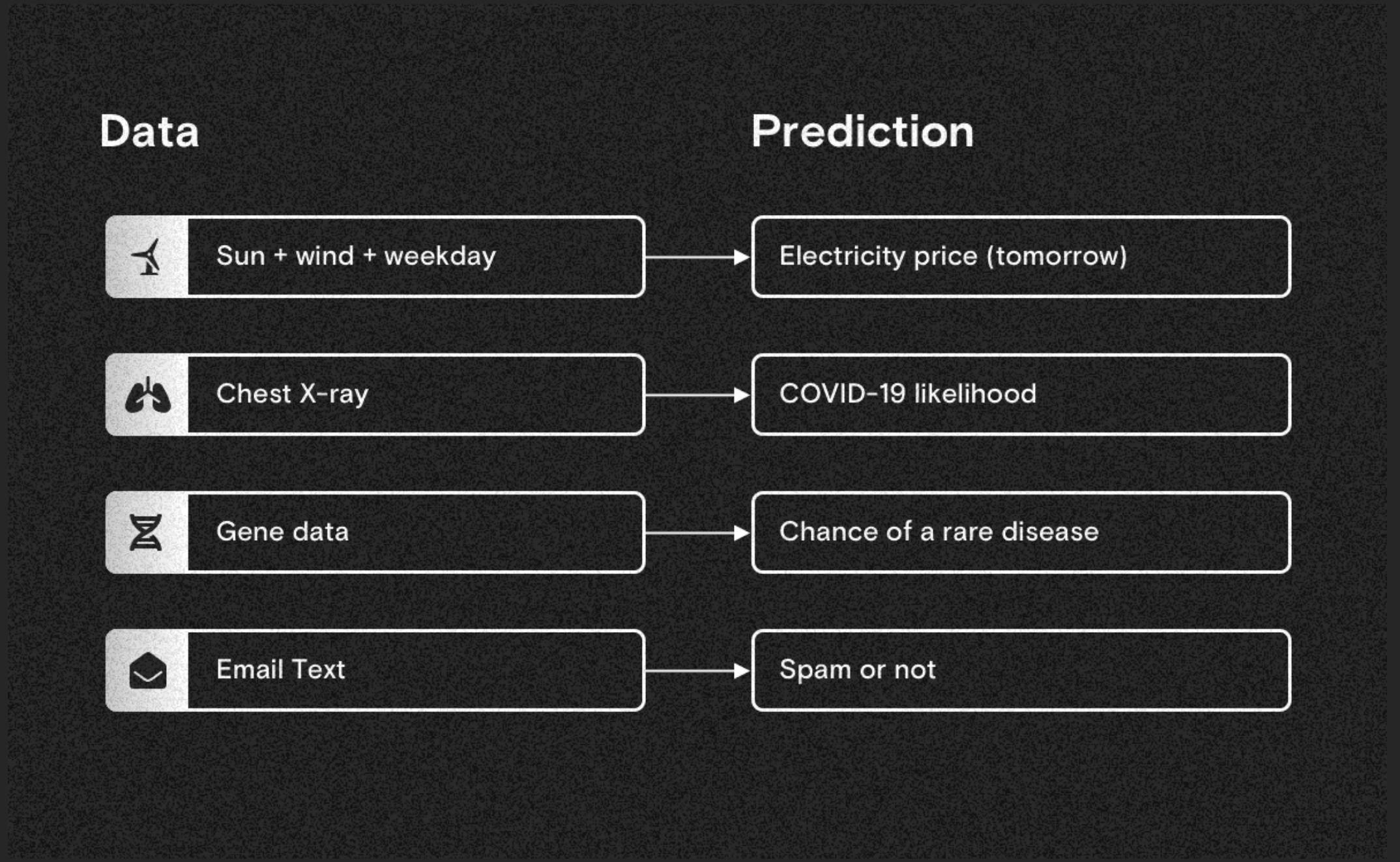
AI Landscape



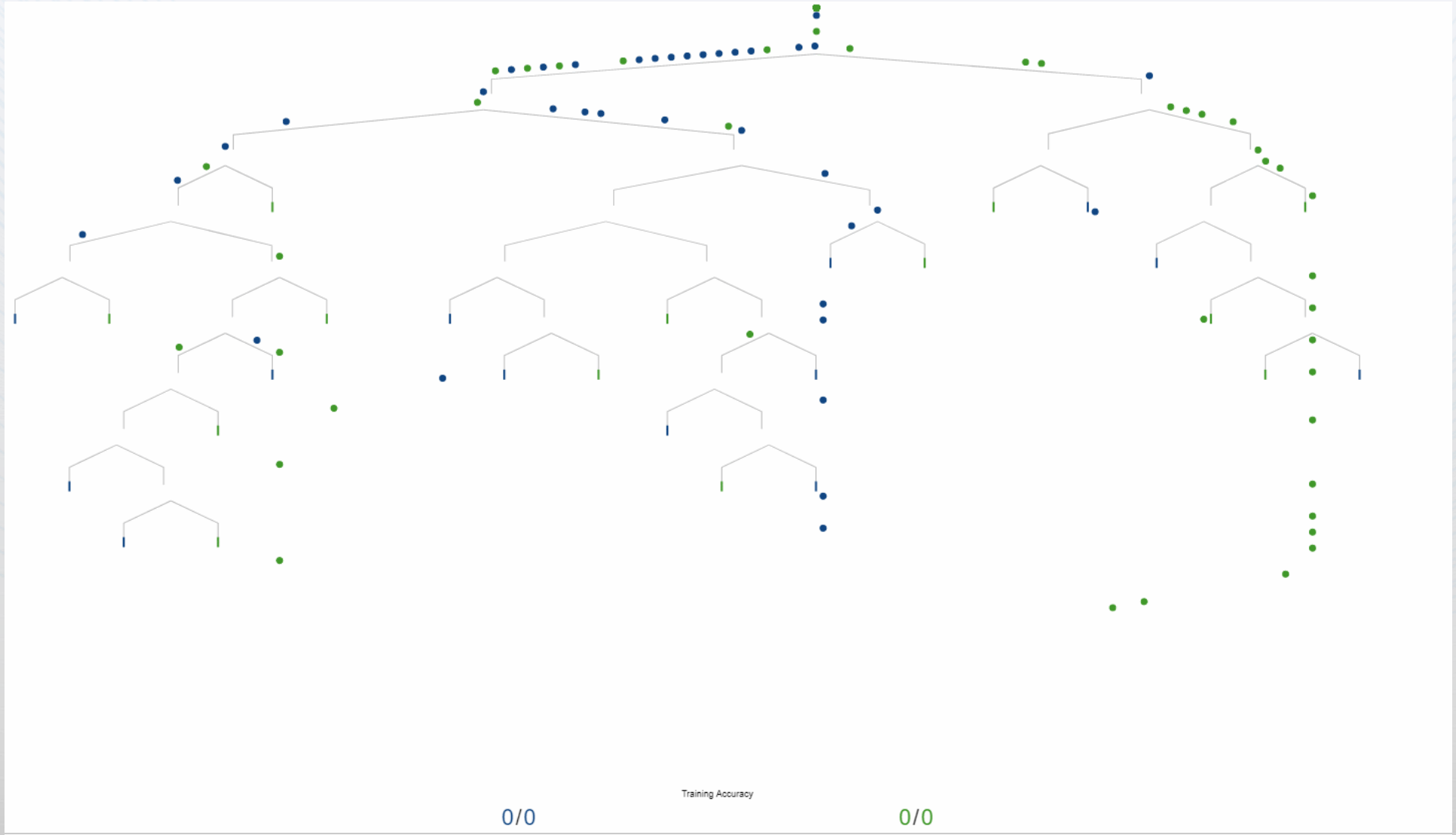
Supervised Learning





https://towardsdatascience.com/what-is-machine-learning-a-visual-explanation-14642b90429f

From Data to getting a Supervised Learning Model



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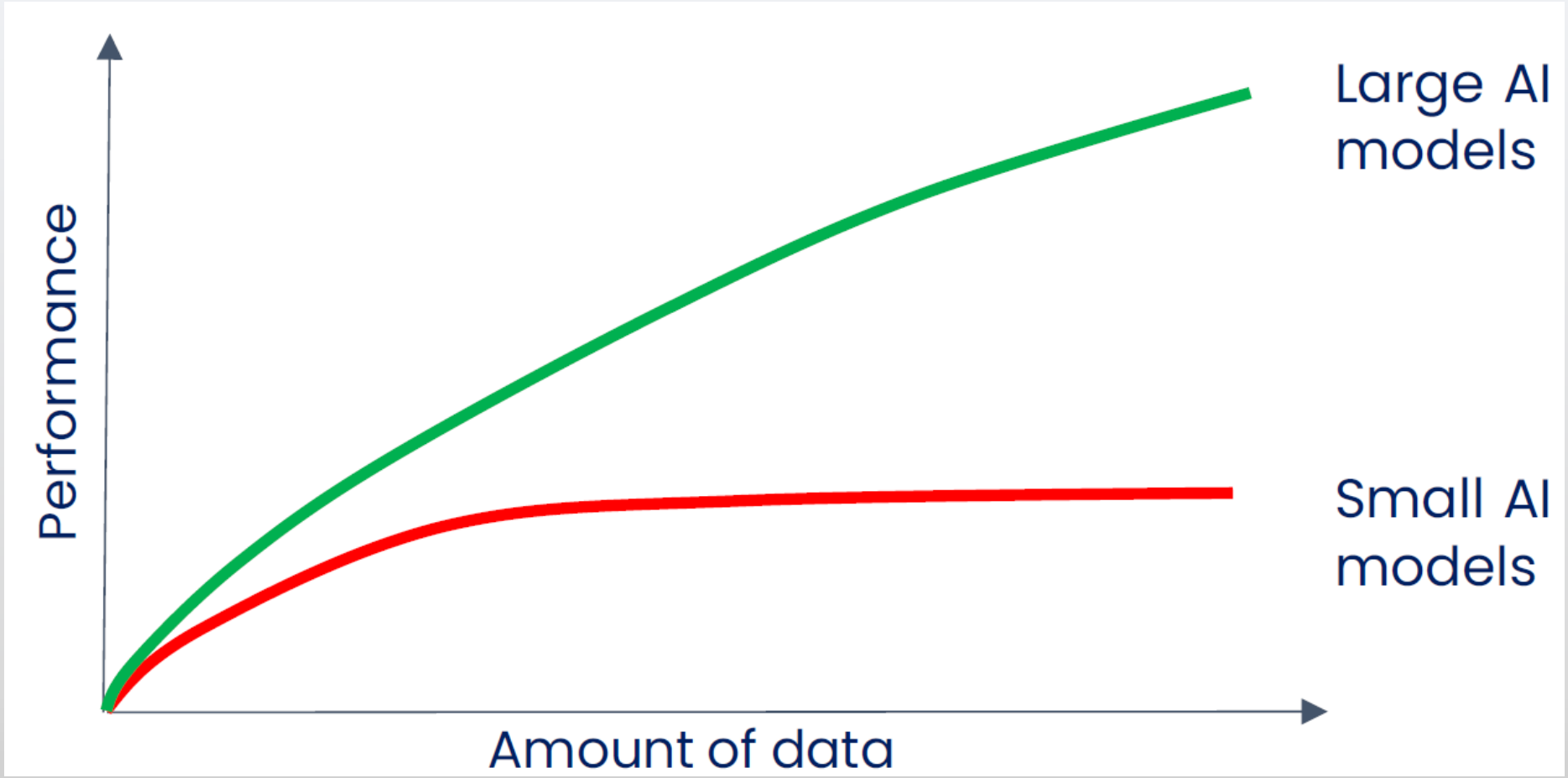
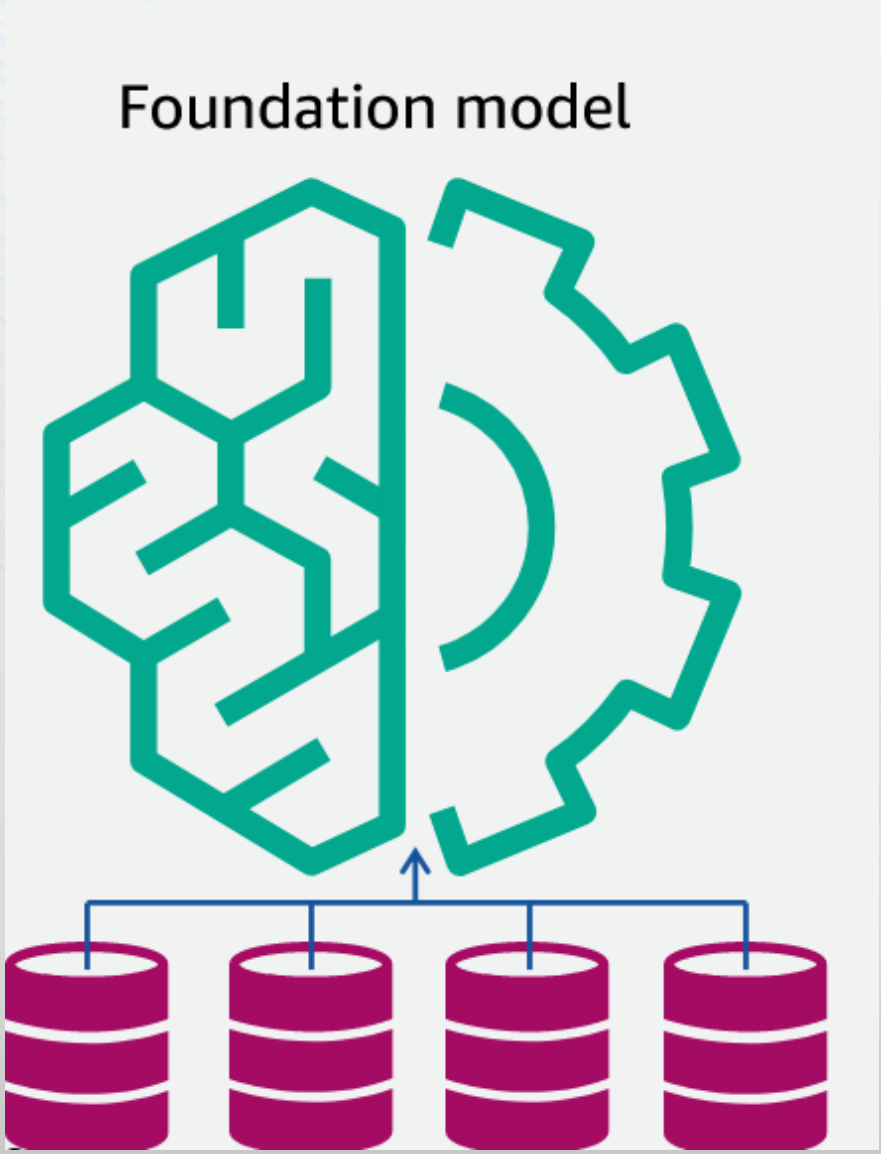
http://www.r2d3.us/visual-intro-to-machine-learning-part-1/

2010-20: Large scale supervised learning



Foundation Models



Text generation

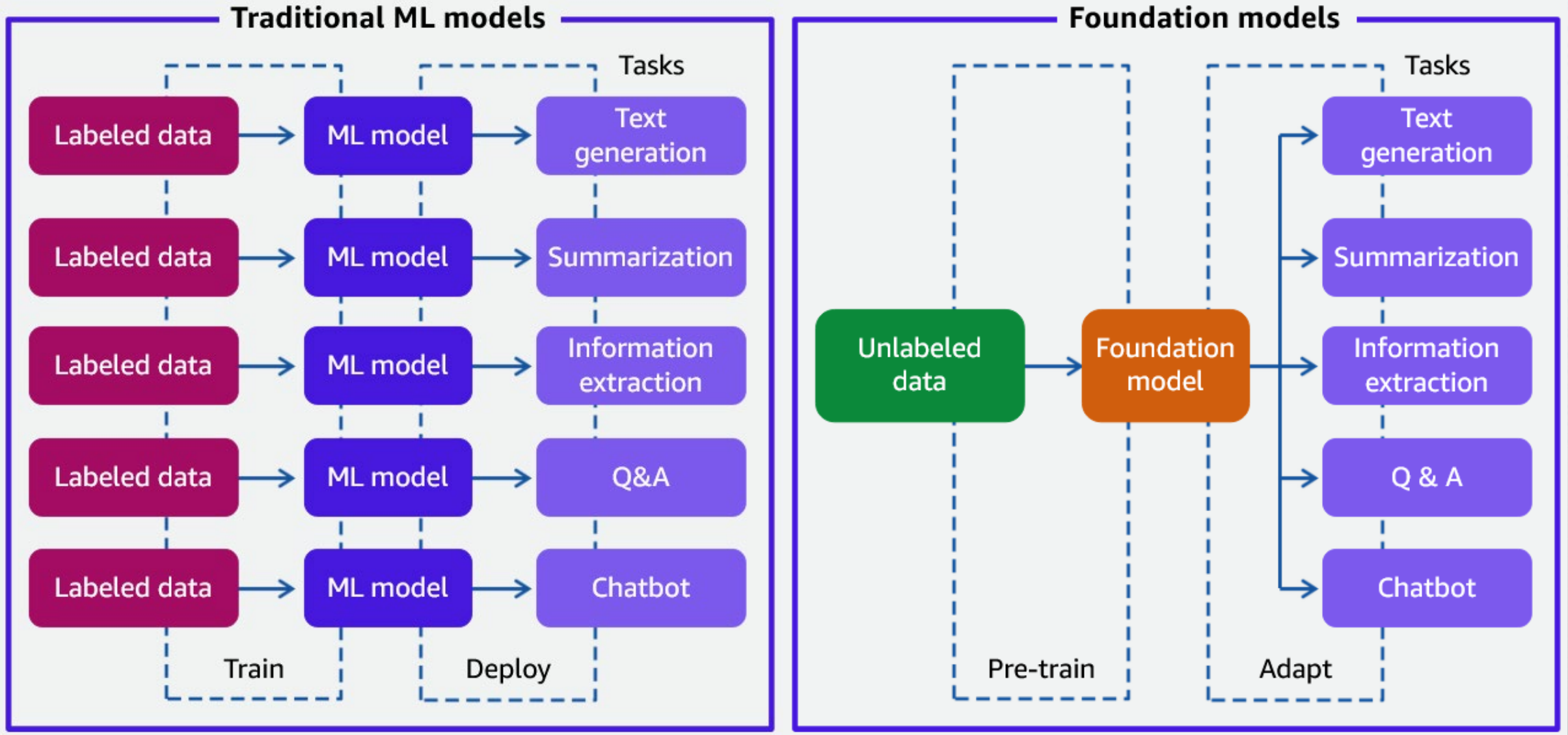
Data summarization

Information extraction

Q&A responses

Chatbot interactions

Comparison of traditional and foundation models



Generative AI use cases

Enhance customer experiences

Boost employee productivity

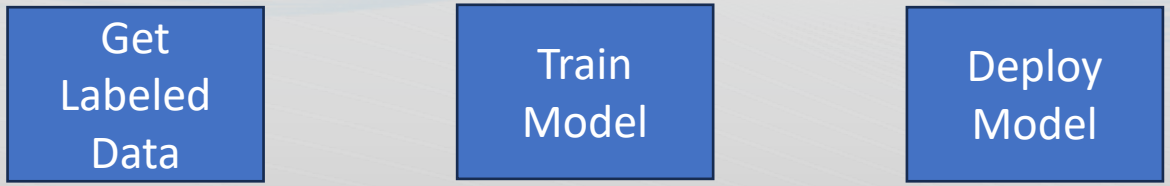
Optimize processes

Enhance creativity and content creation

Building software applications with Gen AI

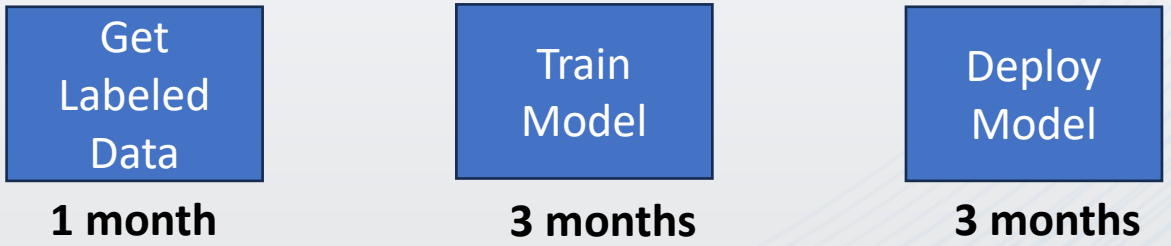
- Detecting sentiment of Customer Emails
  - Usual approach would be to do this with Supervised Learning

X	Y
"Absolutely thrilled with this product! It exceeded my expectations in both quality and performance"	**Positive**
"The product arrived damaged and is not as described, completely failing to meet my expectations"	**Negative**
"Ever since I bought this product, it has significantly improved my daily routine with its exceptional quality and user-friendly design"	**Positive**



Supervised vs Prompt based development

SUPERVISED LEARNING



PROMPT-BASED DEVELOPMENT

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```
import tensorflow as tf

#Importing the Dataset
import tensorflow_datasets as tfds
imdb, info = tfds.load("imdb_reviews", with_info=True, as_supervised=True)
```

```
#Getting the training and testing sets
import numpy as np

train_data, test_data = imdb['train'], imdb['test']

training_sentences = []
training_labels = []

testing_sentences = []
testing_labels = []

for s,l in train_data:
  training_sentences.append(str(s.numpy()))
  training_labels.append(l.numpy())

for s,l in test_data:
  testing_sentences.append(str(s.numpy()))
  testing_labels.append(l.numpy())

training_labels_final = np.array(training_labels)
testing_labels_final = np.array(testing_labels)
```

```
model = tf.keras.Sequential([
    tf.keras.layers.Embedding(vocab_size, embedding_dim, input_length=max_length),
    tf.keras.layers.Flatten(),
    tf.keras.layers.Dense(6, activation='relu'),
    tf.keras.layers.Dense(1, activation='sigmoid')
])
model.compile(loss='binary_crossentropy',optimizer='adam',metrics=['accuracy'])
model.summary()
```

Prompt-based development

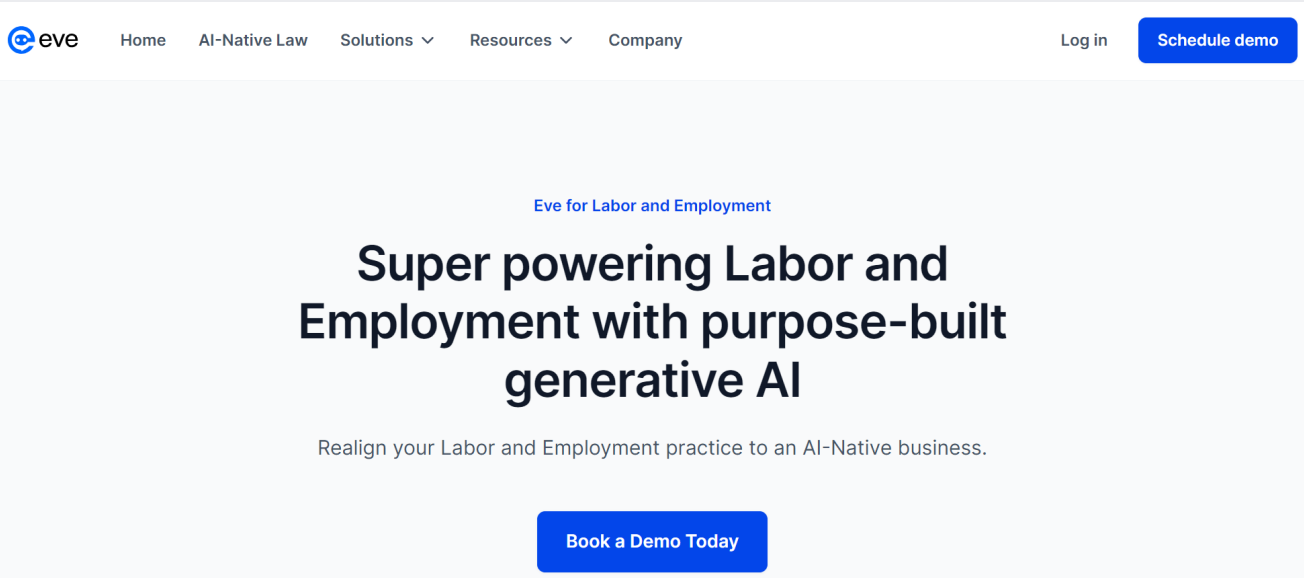
```
prompt = '''
    Classify the following review as having either a positive or negative sentiment:

    The product was different from the description, it arrived late and was also damaged.
'''

response = llm_response(prompt)
print(response)
```

Demo

Prompt based development

Text prompts to Video

Jay Madheswaran, CEO and Founder of Eve



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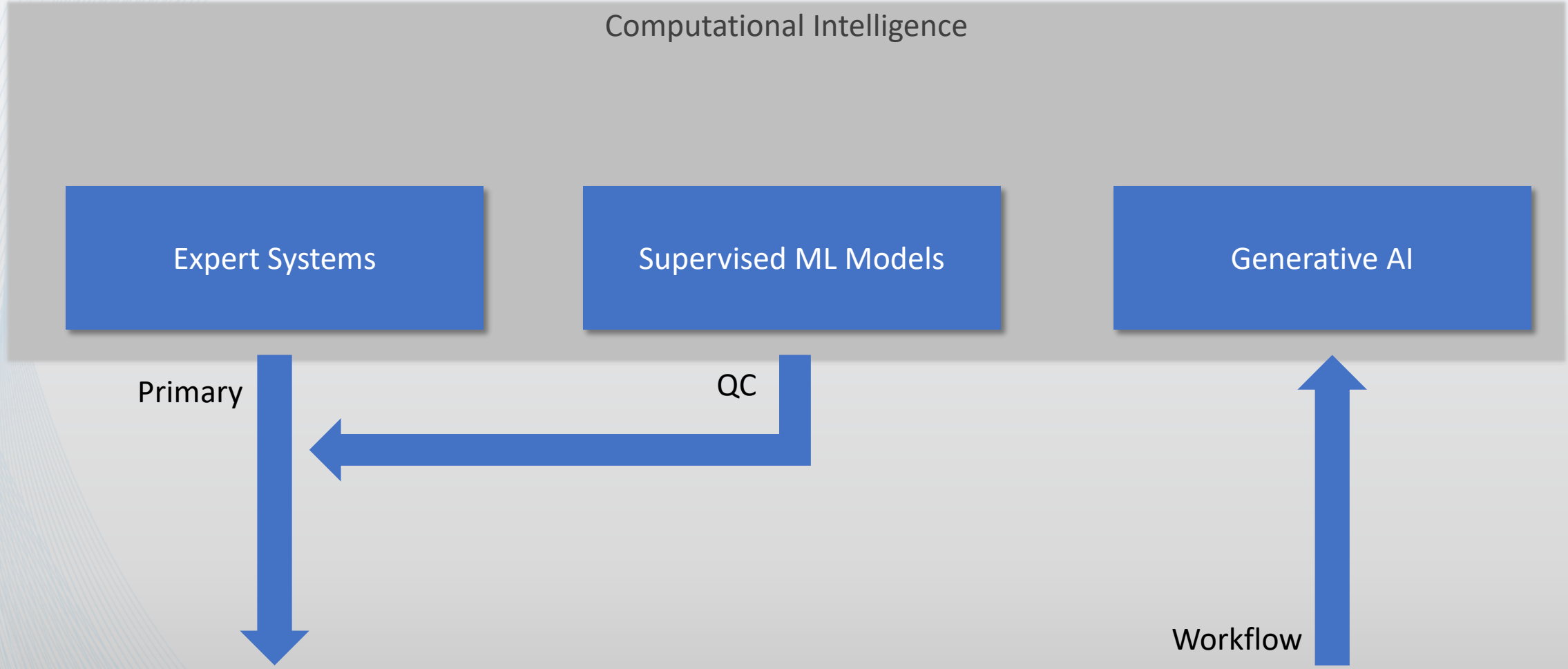

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Questions?

Thank you for your interest.

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