



# AI DEMO BATTERY RECOGNIZER

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# AGENDA

- AI vs Machine Learning vs Deep Learning
- Azure Cognitive Services
- Demo – Battery Recognizer
- Lessons Learn
- Q&A

AI = THINKING MACHINE?



# AI VS MACHINE LEARNING VS DEEP LEARNING

## Artificial Intelligence

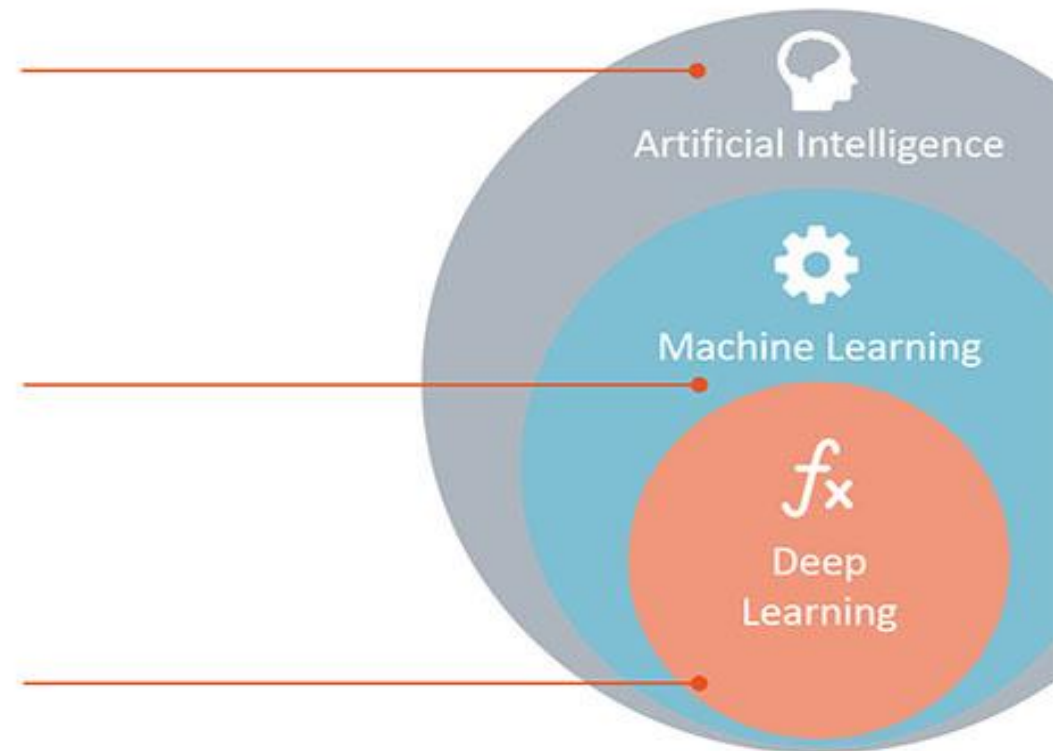
Any technique which enables computers to mimic human behavior.

## Machine Learning

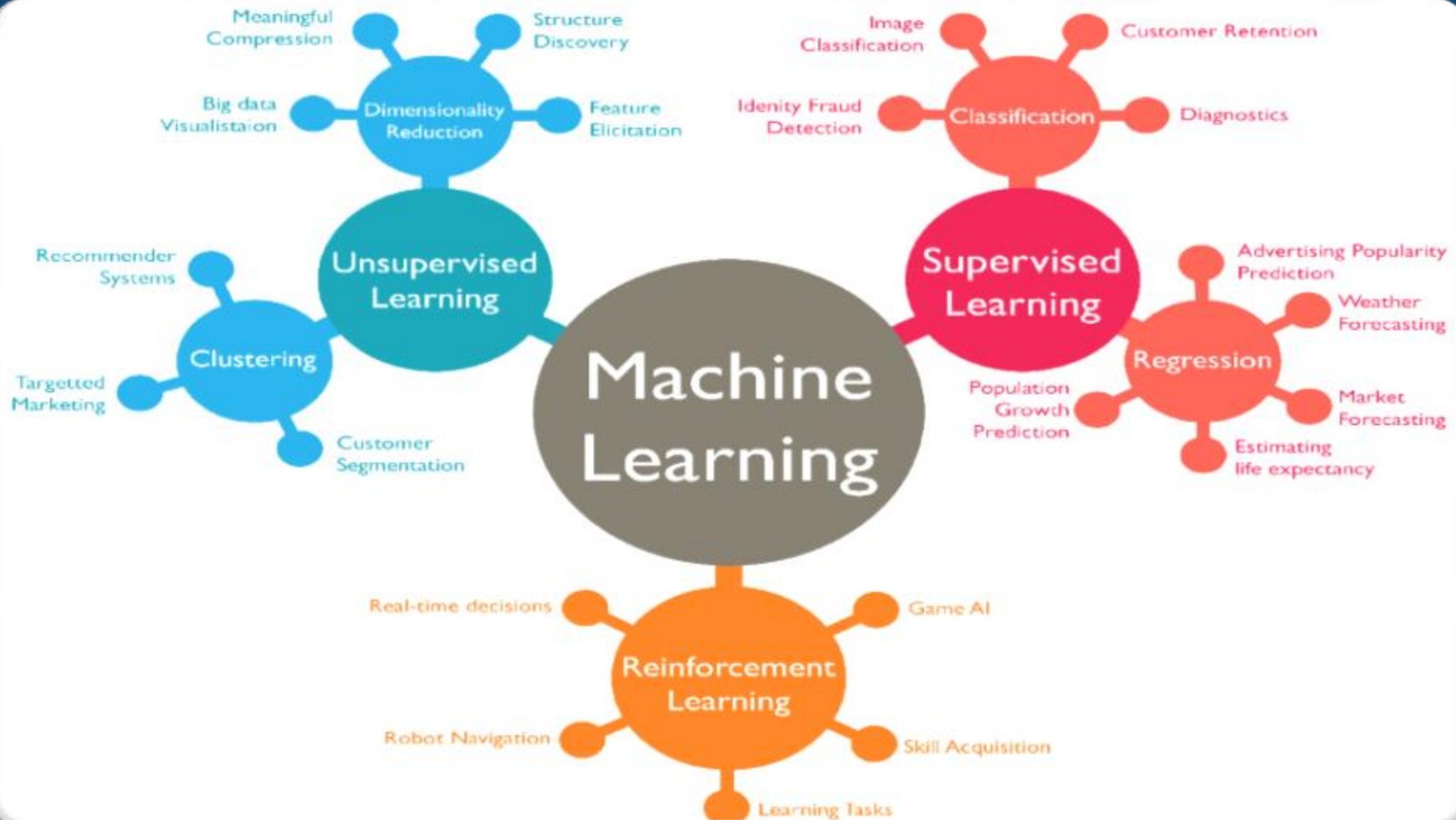
Subset of AI techniques which use statistical methods to enable machines to improve with experiences.

## Deep Learning

Subset of ML which make the computation of multi-layer neural networks feasible.



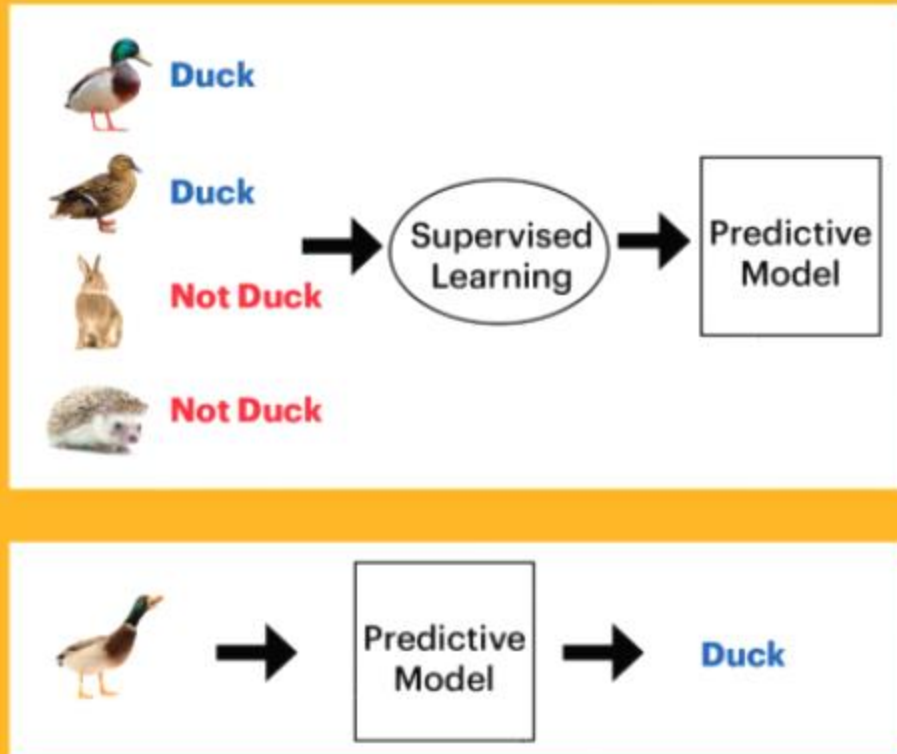
# MACHINE LEARNING



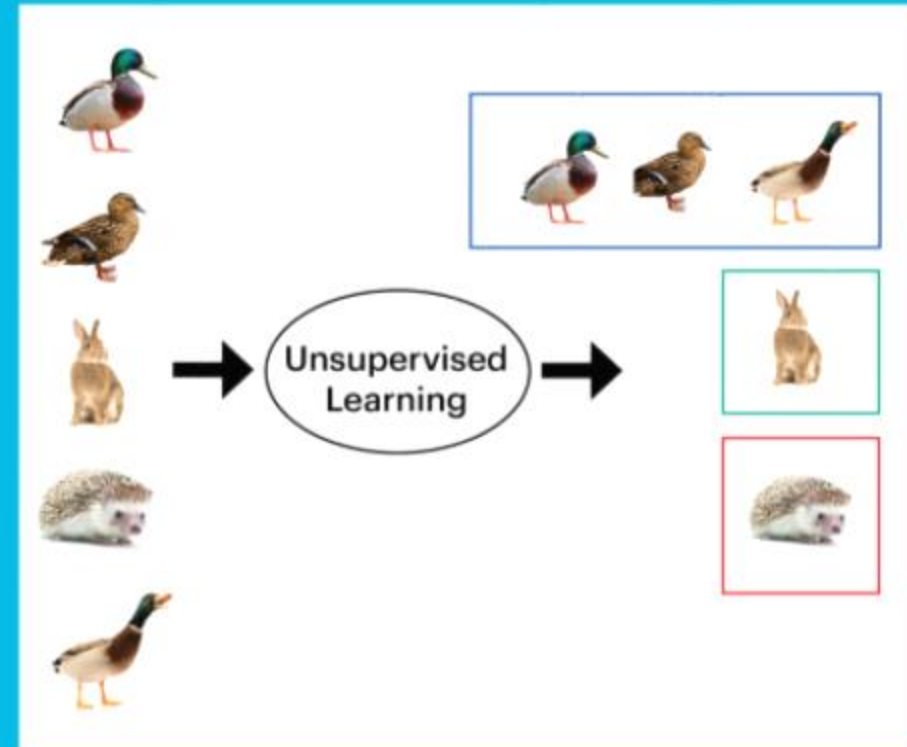


# SUPERVISED VS UNSUPERVISED

## Supervised Learning (Classification Algorithm)



## Unsupervised Learning (Clustering Algorithm)



# REINFORCEMENT LEARNING



# MACHINE LEARNING VS DEEP LEARNING

## Machine Learning

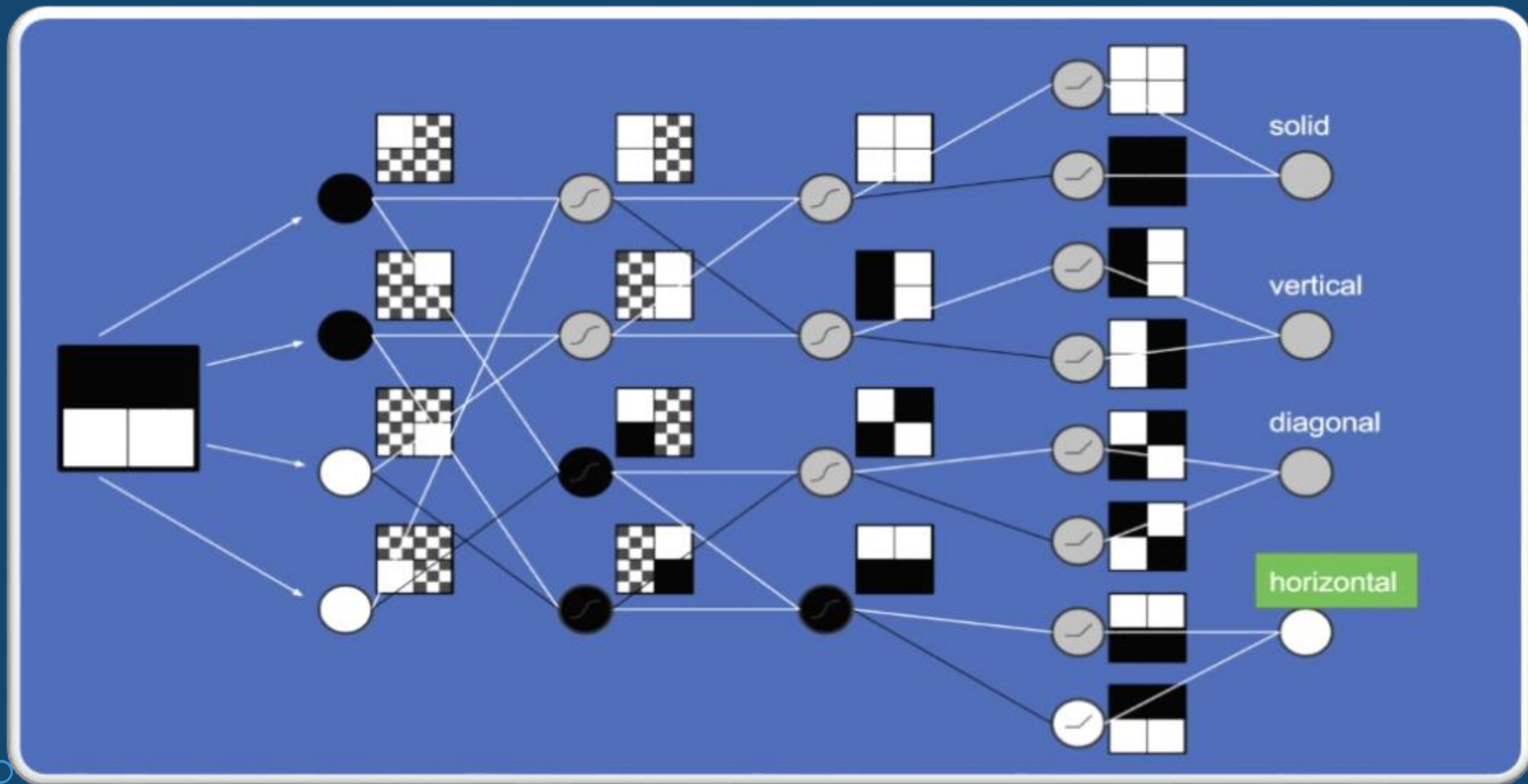


## Deep Learning

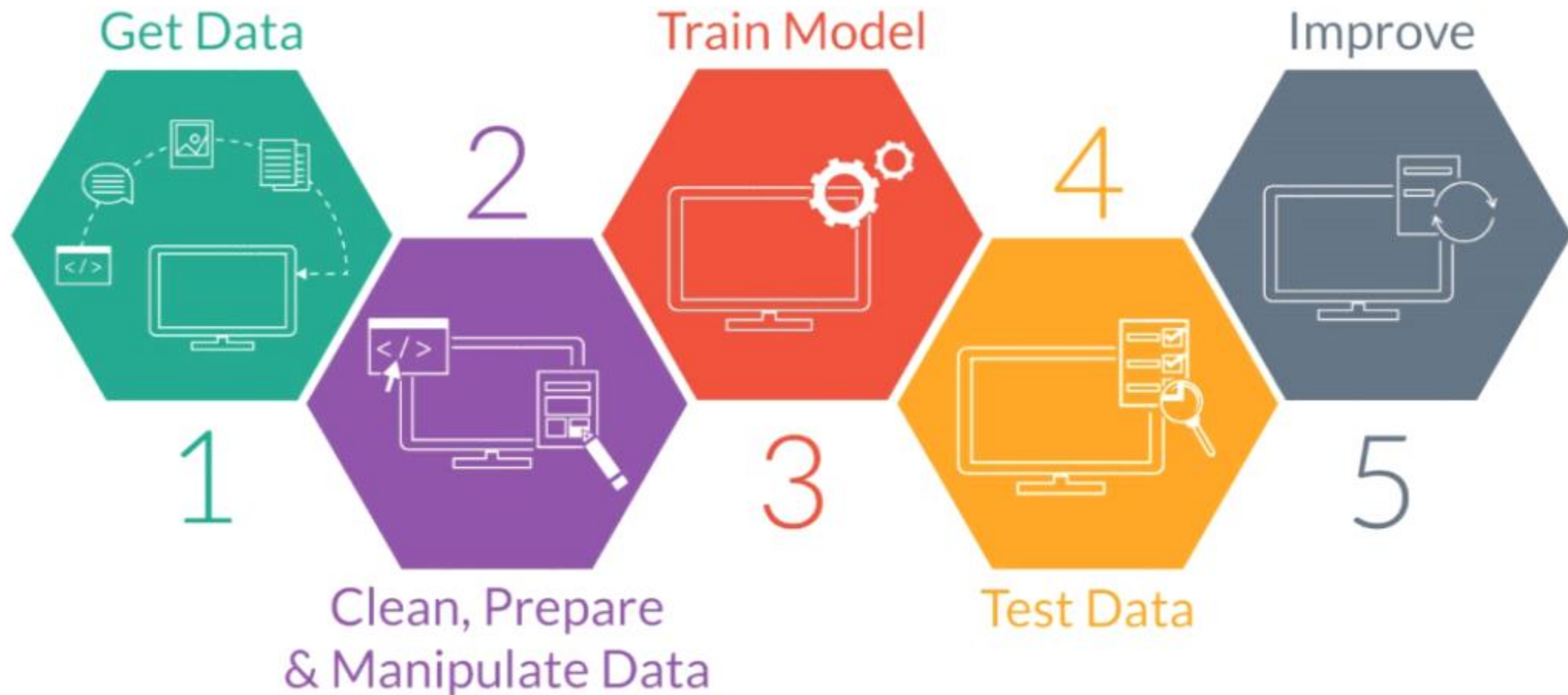




# NEURAL NETWORK IN DEEP LEARNING



# MACHINE LEARNING WORKFLOW



# AZURE COGNITIVE SERVICES

Give your apps a human side



## Vision

Computer Vision  
Content Moderator  
Emotion  
Face  
Video  
Video Indexer  
Custom Vision Service



## Speech

Bing Speech  
Speaker Recognition  
Custom Speech Service



## Language

Bing Spell Check  
Language Understanding  
Linguistic Analysis  
Translator Text & Speech  
Web Language Model  
Text Analytics



## Knowledge

Academic Knowledge  
Entity Linking  
Knowledge Exploration  
Recommendations  
QnA Maker  
Custom Decision Service



## Search

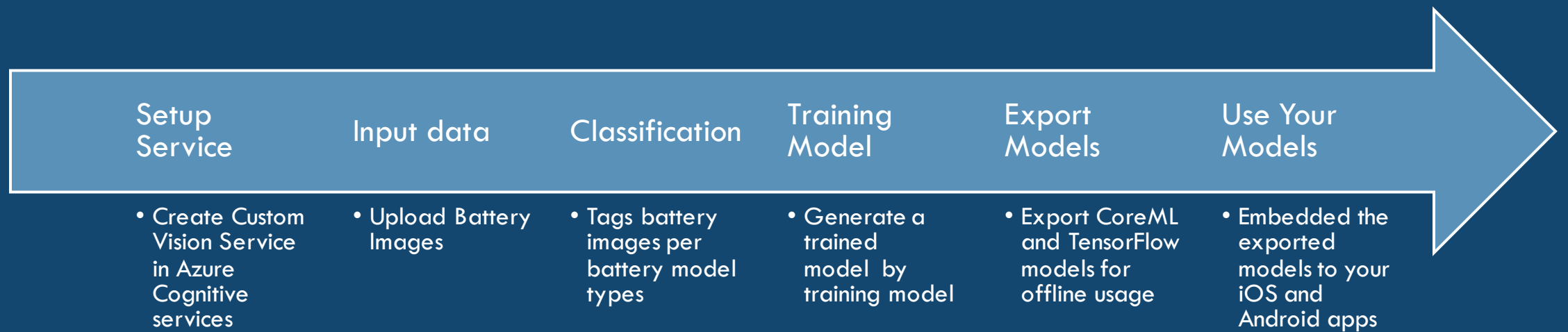
Bing Autosuggest  
Bing Image Search  
Bing News Search  
Bing Video Search  
Bing Web Search  
Bing Custom Search



## Labs

Project Prague (gesture)  
Cuzco (events)  
Johannesburg (routing)  
Nanjing (Isochrones)  
Abu Dhabi (distance matrix)  
Wollongong (location)  
Enduring Freedom (just kidding 😊)

# DEMO – BATTERY RECOGNIZER



# LESSONS LEARN

- Leverage AI platforms like Azure Cognitive Services to create your own ML models easily
- Support offline ML model's implementation for better UX and privacy but may decrease the accuracy.
- "Data, Data, DATA" - the key for creating high accurate ML models
- Evaluate your ML models results continuously to improve performance





QUESTIONS?

Demo App Source code

<https://goo.gl/AcY2Qd>