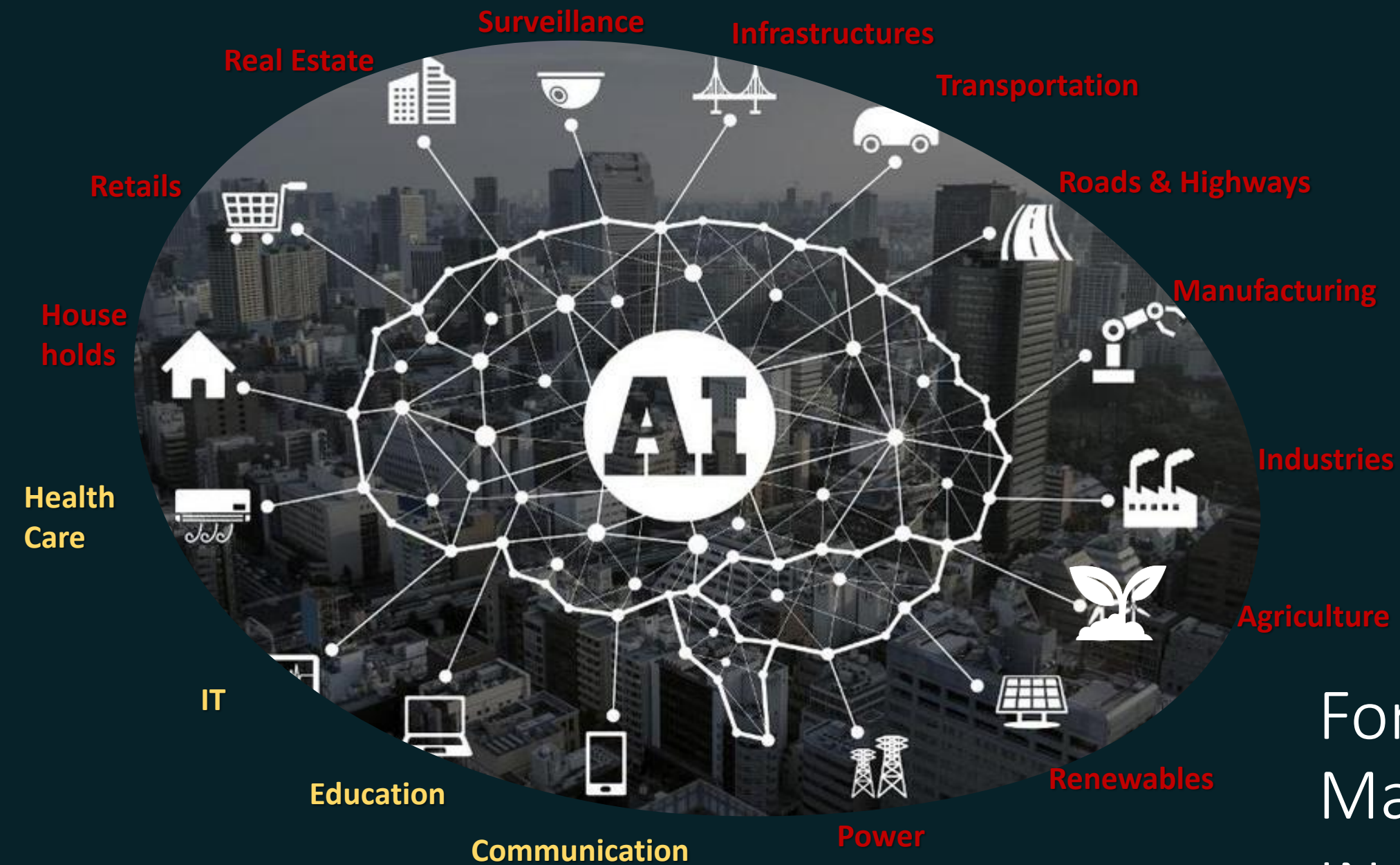


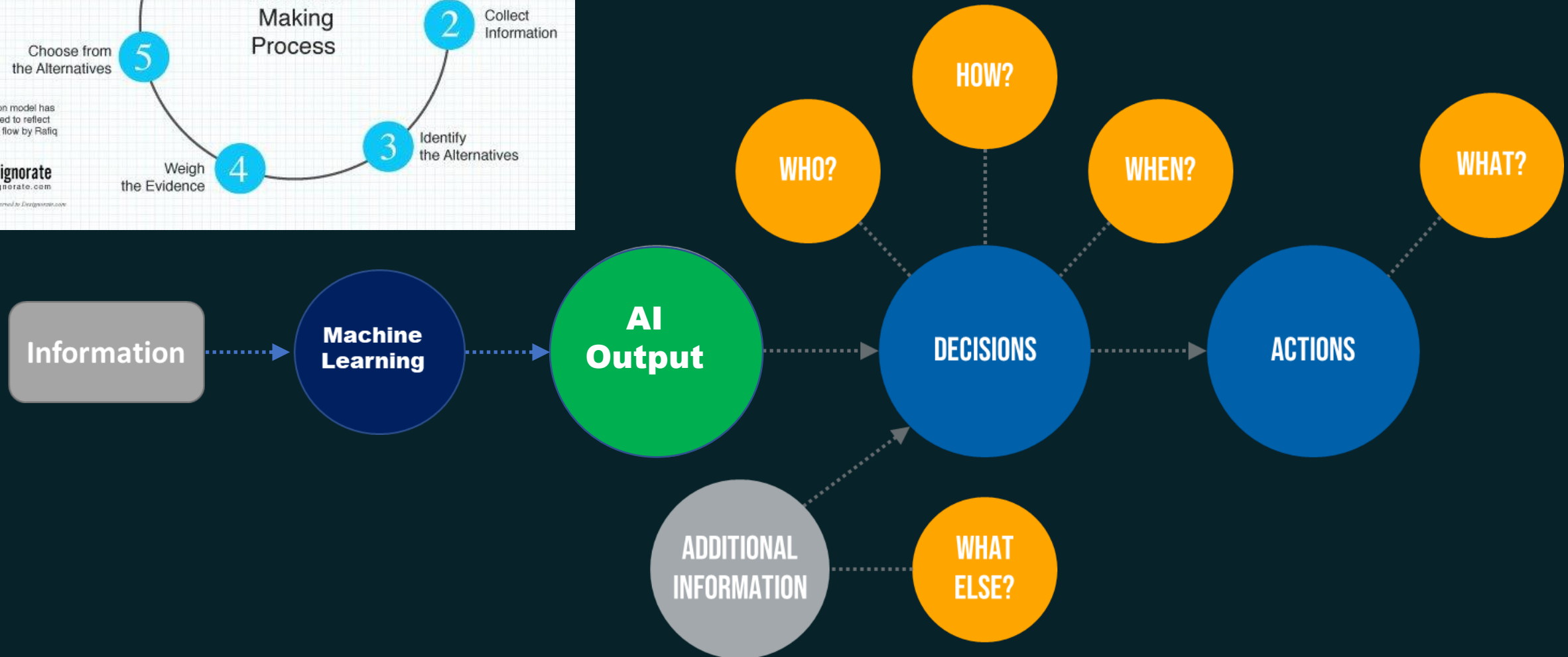
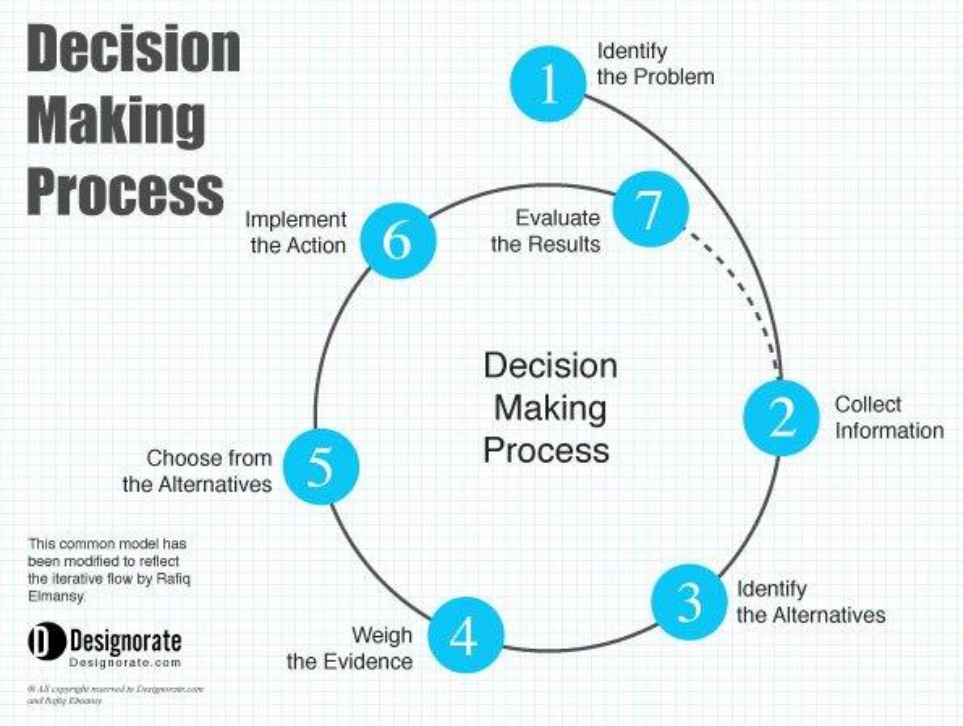
# Recap





For Decision  
Making  
IN

# Summary: AI augments decision making process





## AI and Business



**300%**

increase  
investment in AI  
methodology this  
year across all  
businesses



**57%**

of businesses  
expect it to help  
improve customer  
experience and  
support



**20%**

of major retailers  
will use AI to  
personalize the  
brand experience  
from awareness  
through purchase



**20%**

of all workers will  
use automated  
assistance  
technologies to  
make decisions  
and get work  
done



**80%**

of executives  
say AI boosts  
productivity  
and creates new  
positions

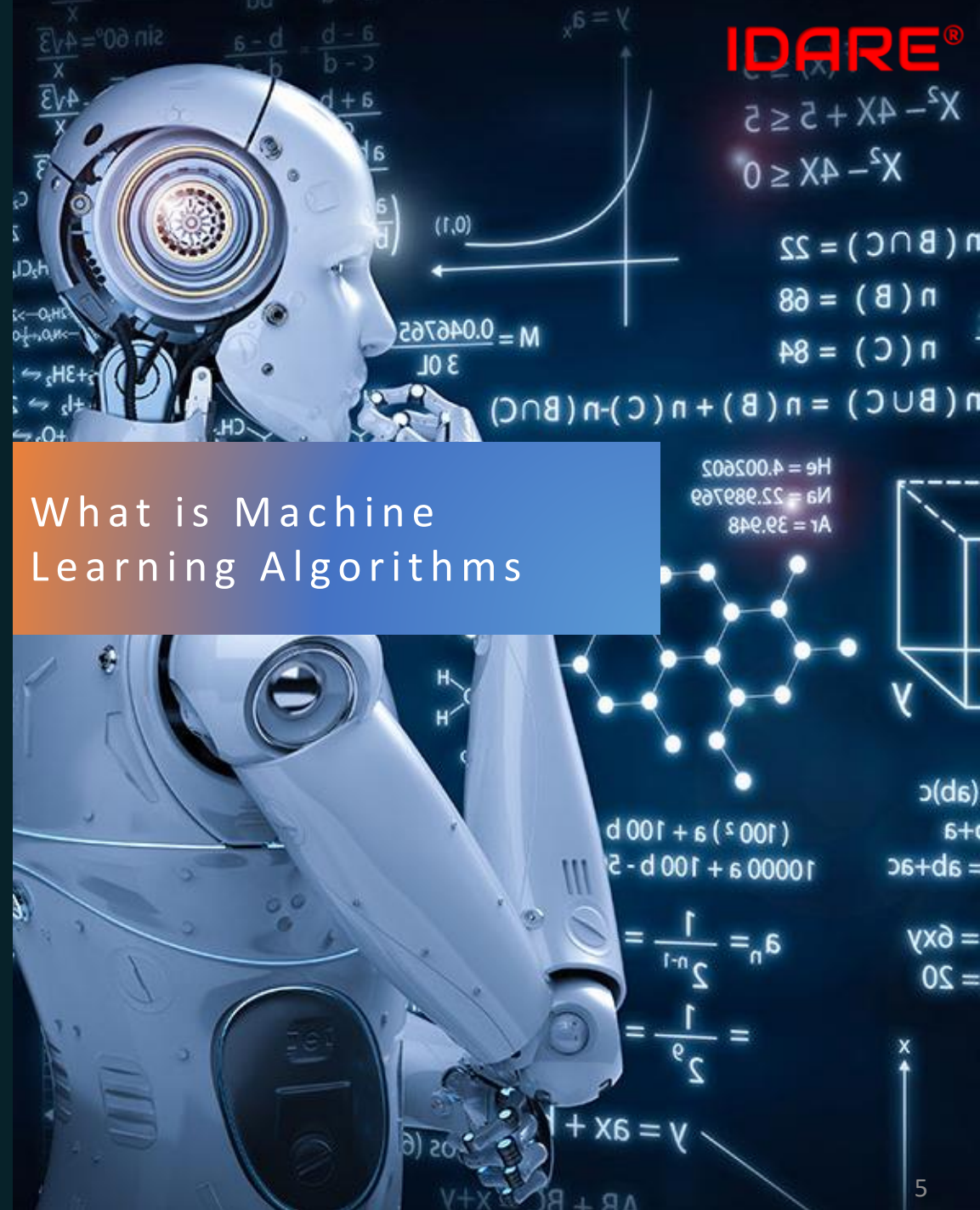
Source: Forrester/IDC/Narrative Science

# MACHINE LEARNING

ARE MATHEMATICAL ALGORITHMS THAT HELPS  
LEARNING FROM HISTORY, EXTRACT  
KNOWLEDGE THEN EITHER CLASSIFIES OR  
QUANTIFIES

**Machine Learning (ML)** is a collection of tools and techniques that transforms data into (hopefully good) decisions by making *classifications*, like whether or not someone will love a movie, or *quantitative predictions*, like how tall someone is.

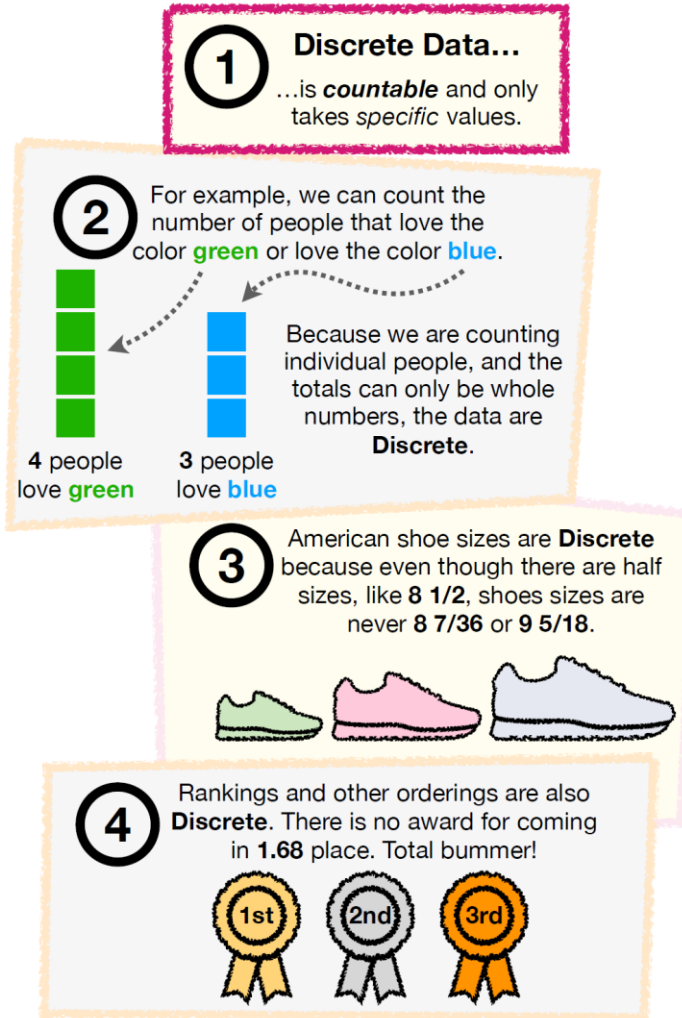
It's all about those two things. When we use machine learning to make *quantitative predictions*, we call it **Regression**. And when we *classify* things, we call it **Classification**.



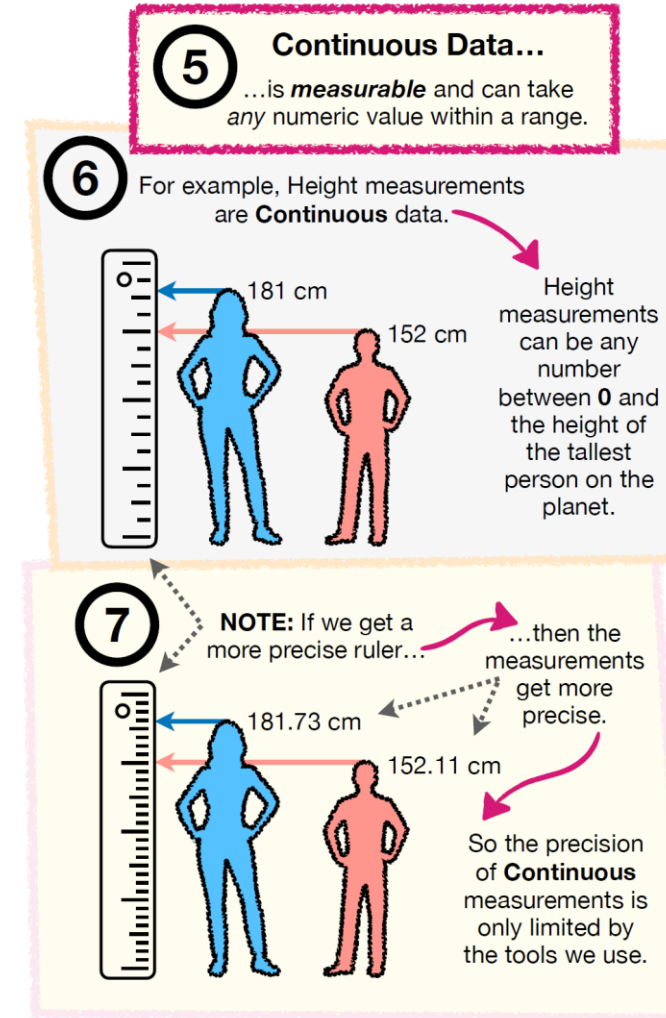
## Terminology Alert!!! Discrete and Continuous Data

### Discrete Data

- Discrete Number  
i.e. 10, 20, 30
- Text or String i.e.
  - Red, Blue
  - Tall, Long
  - Fail, No Fail



## Classification



## Regression

### Continuous Data

- Any number between ranges can be even fractions



# Types of Algorithms utilized in AI

## Statistical Algorithm



- Designed understands relationship between variables
- Learn From Past and Predict Future
- Serves as the basis of explainability of the solution
- Useful when the problem is well understood

Linear Regression, logistic Reg. ,  
SVR etc.

## Machine Learning Algorithm



- Designed to provide accurate prediction
- Learn From Past's **Mistake** and Predict Future
- Useful when the problem is less understood

Decision Tree, Neural Network, Deep  
Learning, Gradient Boosting etc



# Make it a habit.

Solving Problem  
performing Critical  
thinking and  
Analytical thinking



# AI Implementation Process

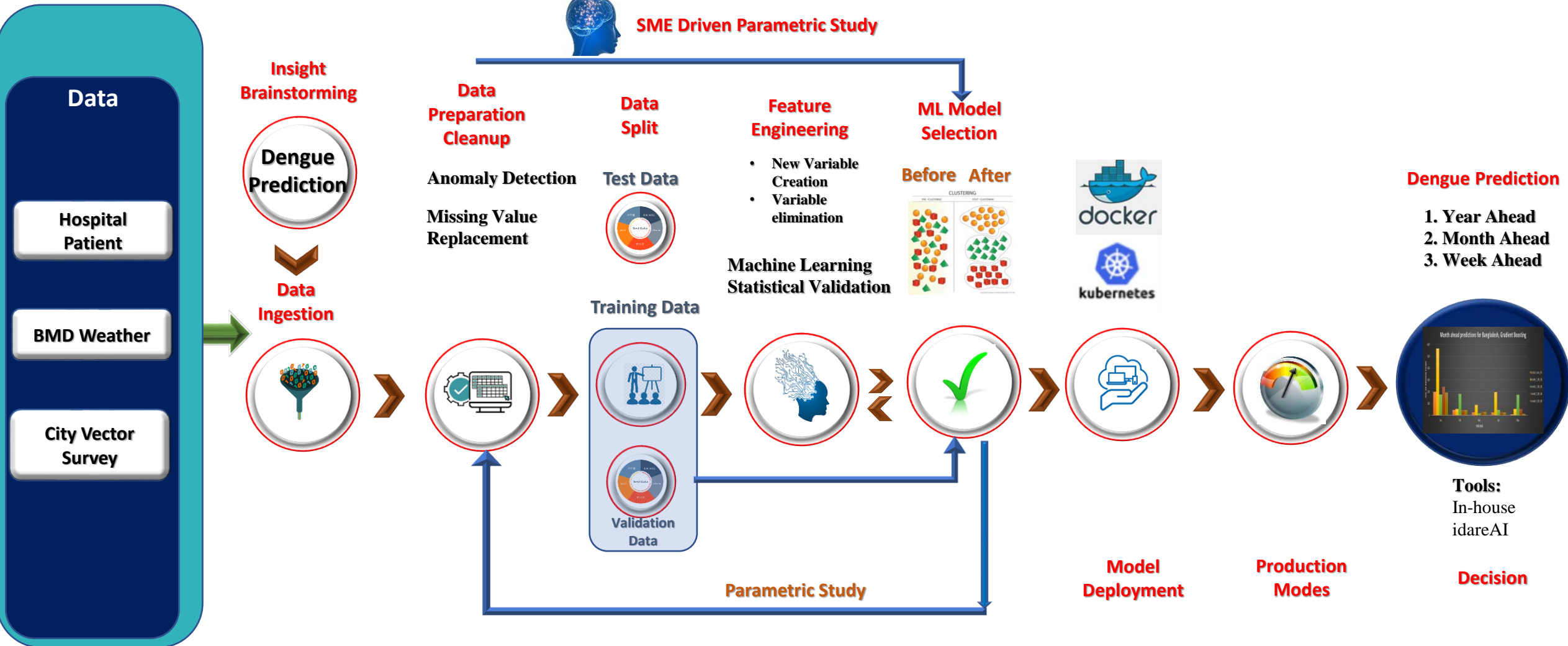
IDARE®

Data

Training- Testing

Deploy

Decision

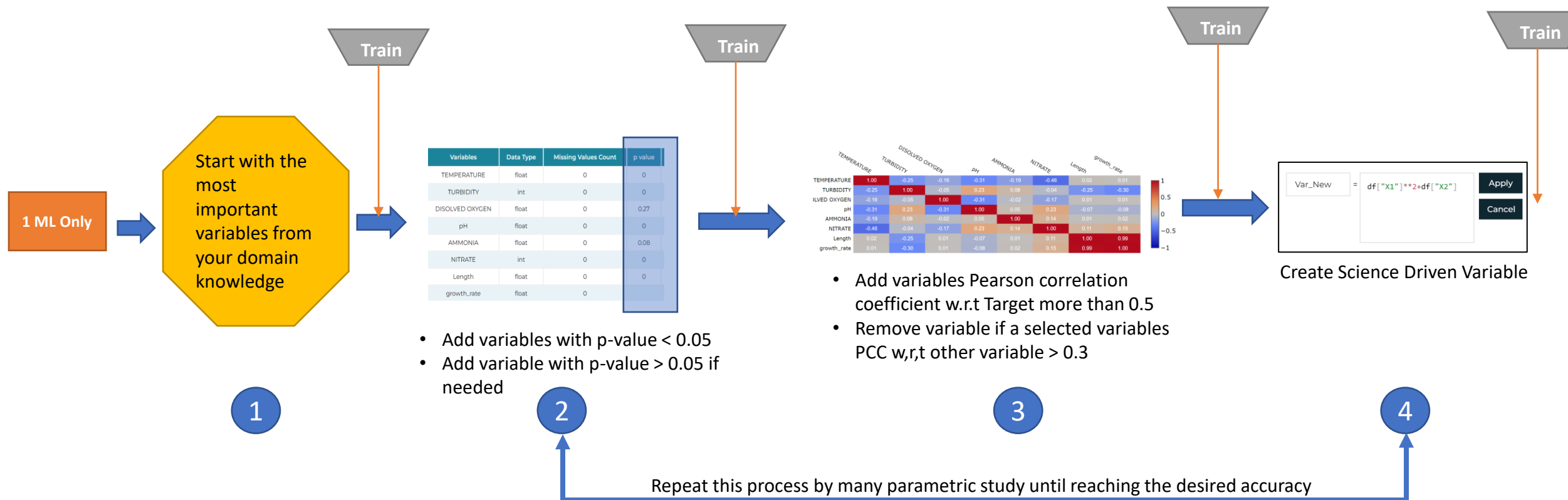
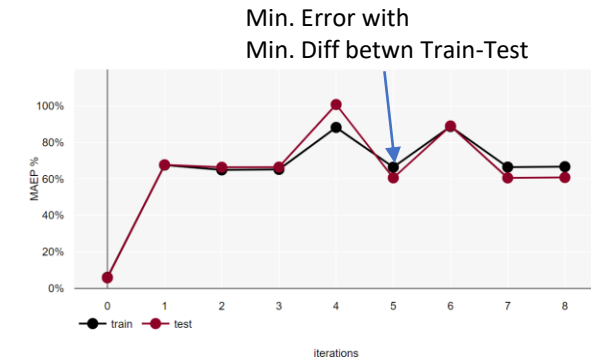


# Successful Model Building: Variable/Feature Selection Strategy IDARE®

Your target will be Lowest Error with Highest Stability with optimal bias and minimum variances.

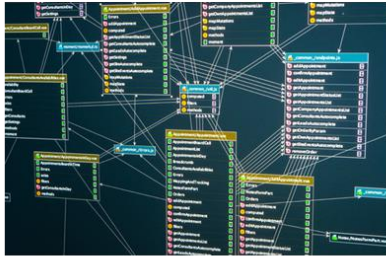
Select the variable for

- the lowest error AND
- lowest differences between train and test error.



# Development Requirements for Production Scale for Cloud based

Cloud Modification



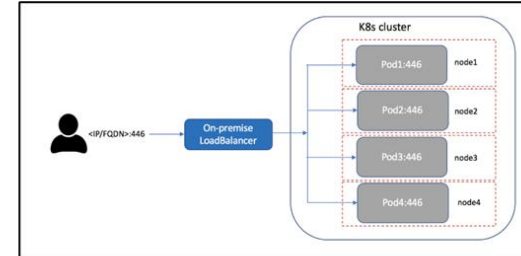
Data Management Code  
Connect, Store & Send (~20%)

Cloud Modification

```
#Modeling :  
#Using sklearn package to model data :  
from sklearn import linear_model  
regr = linear_model.LinearRegression()  
  
train_x = np.array(train[["ENGINE SIZE"]])  
train_y = np.array(train[["CO2 EMISSIONS"]])  
regr.fit(train_x, train_y)  
  
#The coefficients :  
print ("coefficients : ", regr.coef_)           #Slope  
print ("Intercept : ", regr.intercept_)        #Intercept  
  
coefficients : [[38.79512384]]  
Intercept : [127.16989951]
```

Data Analytics Code  
For AI Solution (~40%)

Cloud Modification



Load Balancing Application  
For Scalability (~10%)

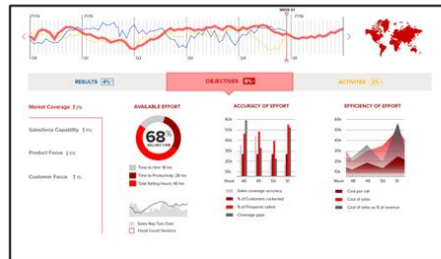


Cloud Application  
(~10%)



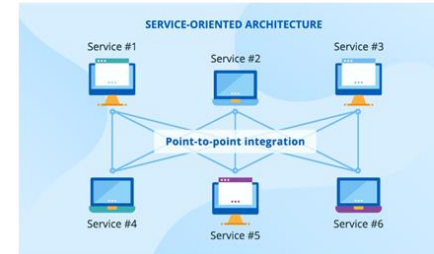
Admin Application  
To manage solution 5%

Cloud Modification



Visualization Application for Decision  
Make ~15%

Cloud Modification



Application Integration Code  
To integrate all 5 applications ~10%

Cloud Modification



# Solved Problems for

- Energy
- Power
- Communication
- Agriculture
- Healthcare
- Transportation
- Banking sector and
- Environment

