

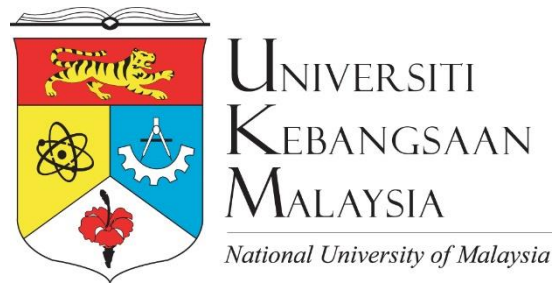
# Artificial Intelligence – Opportunities, Now & Future

**Kaveh Bakhtiyari**

[www.bakhtiyari.com](http://www.bakhtiyari.com)



# BIO



**SAMSUNG**



*Open-Minded*



**SSENSE**



# Outline

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- What is Artificial Intelligence?
- Applications of AI
- Categories of AI
- How to learn AI?
- Future of AI
- AI – Fun vs. Dangerous
- Q&A

# What is Artificial Intelligence?

**Robots?**

**Artificial Human-being?**

**Artificial Animal?**

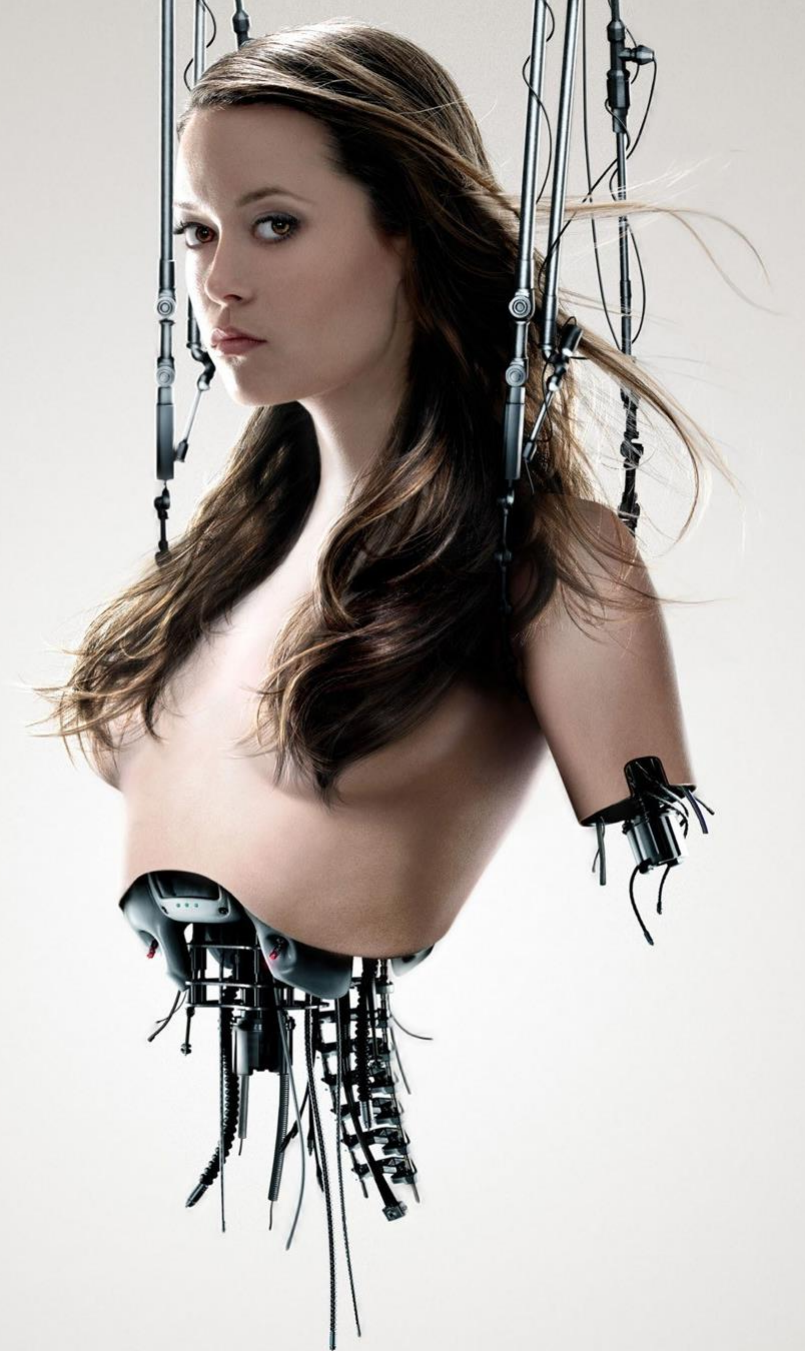
...

**A threat to human being?**

...

...

**etc.?**



# Information Overload

- “People read around 10 MB worth of material a day, hear 400 MB a day, and see 1 MB of information every second” - The Economist, November 2006.
- In 2015, consumption will raise to 74 GB a day - UCSD Study 2014



# What is Artificial Intelligence?

Human being has two capabilities that makes him uniquely intelligent:

- **Learning**
- **Problem Solving**

Any system with these two abilities can mimic the cognitive functions associated to human mind.



Sony Aibo Robot



# AI Applications

- **Personalization**
  - *Recommendation*
  - *Online Advertising*
  - *Gmail auto-complete*
  - ...
- *Map Routing*
- *Autonomous Driving*
- *Medical Image Processing*
- *Banking Mortgage Approval*
- **Voice Assistance**
  - *Amazon Alexa*
  - *Apple Siri*
  - *Samsung Bixby*
  - *Text-2-Speech & Speech-2-Text*
- *Weather Forecast*
- *Auto Smile Photo Shooting*
- *Online Security Systems*
- *and many more...*

# Personalization





# Recommendation



# Example: Benefits of Recommender System

- **Netflix:** 2/3 of the movies watched are recommended
- **Google News:** recommendations generate 38% more click-through
- **Amazon:** 35% sales from recommendations
- **Choicestream:** 28% of the people would buy more music if they found out what they like.



# Future of Advertising...



## Minority Report (2002) By Steven Spielberg

IMDb: 7.6 / 10

<https://www.imdb.com/title/tt0181689/>

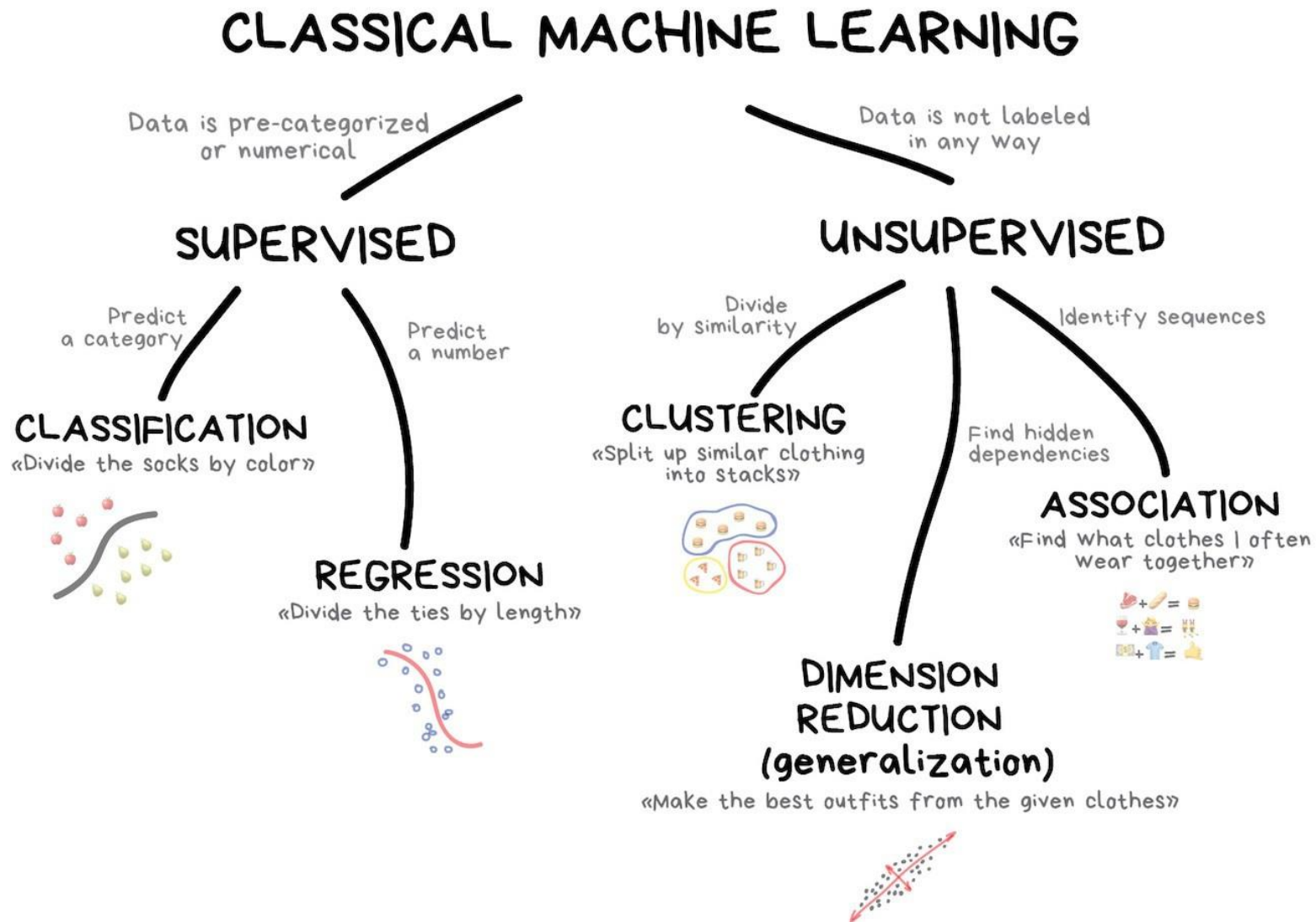
If you have the PDF version, watch the video in the next slide below:

[https://www.youtube.com/watch?v=7bXJ\\_obaiYQ](https://www.youtube.com/watch?v=7bXJ_obaiYQ)

P E R F E C T I O

P U R S U I T

# Categories in AI



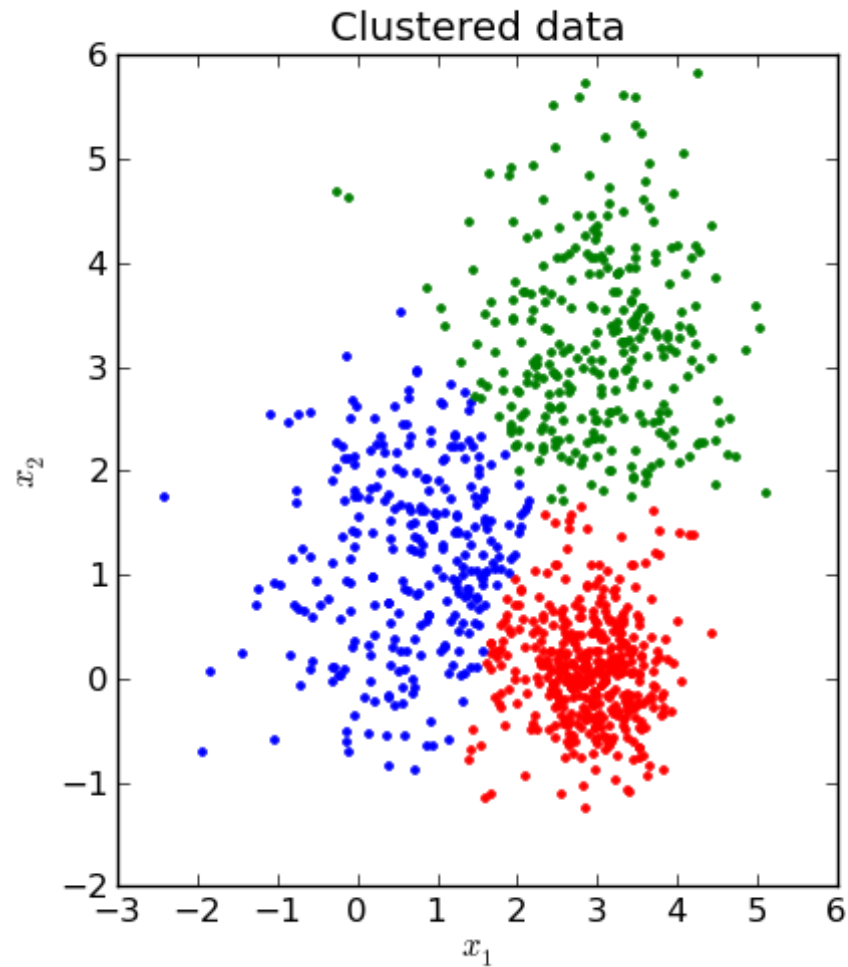
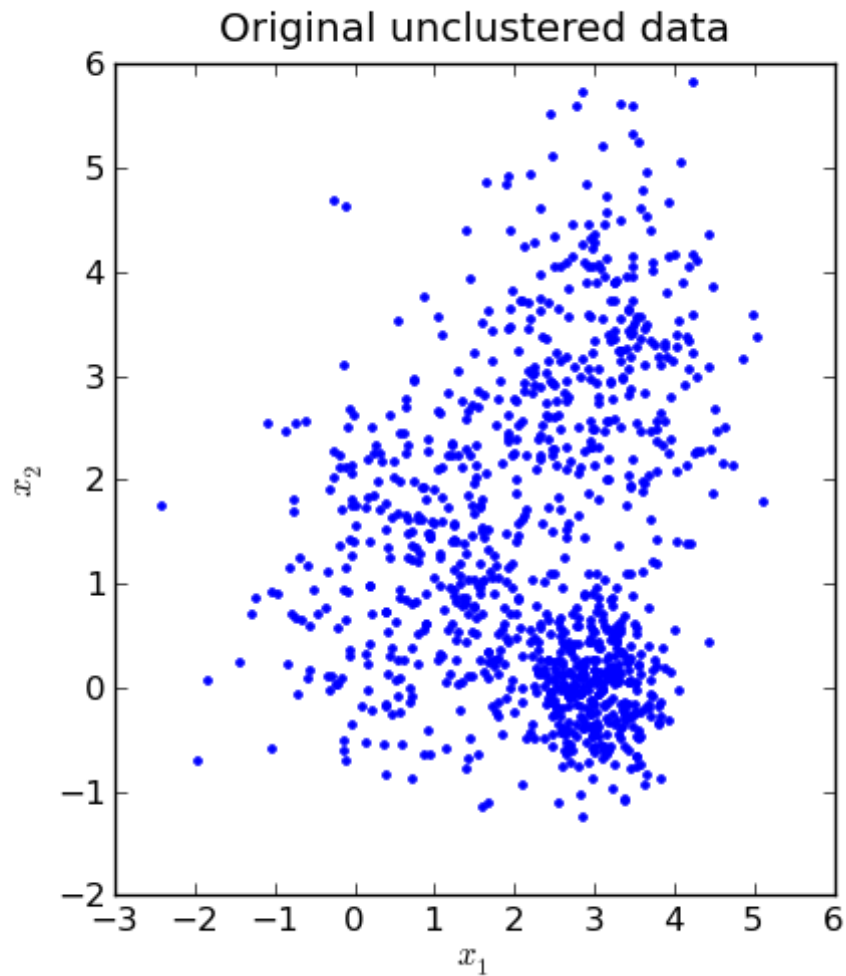
# Categories in AI

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- *Clustering*
- *Classification*
- *Regression*
- *Optimization*
- *Association*
- *Reinforcement Learning*

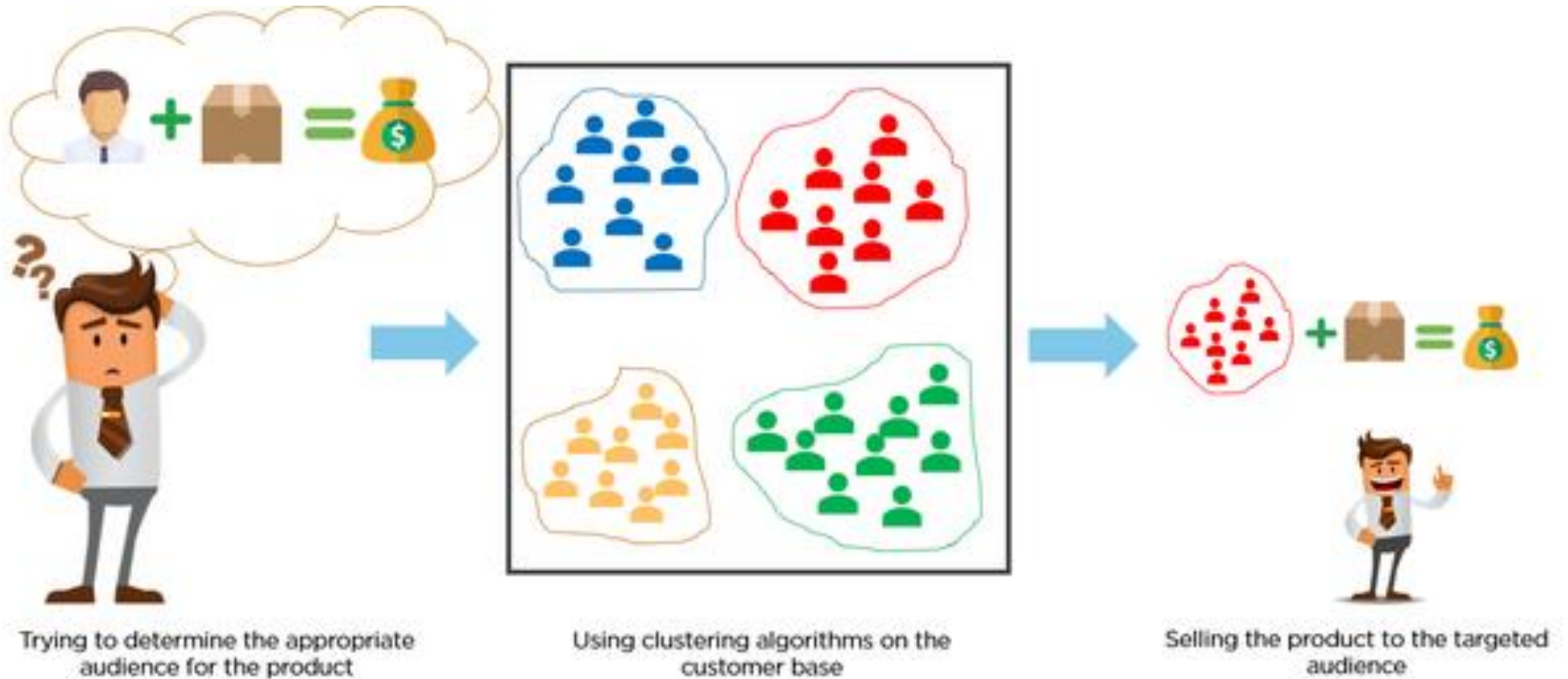


# Clustering (Unsupervised Learning)





# Clustering



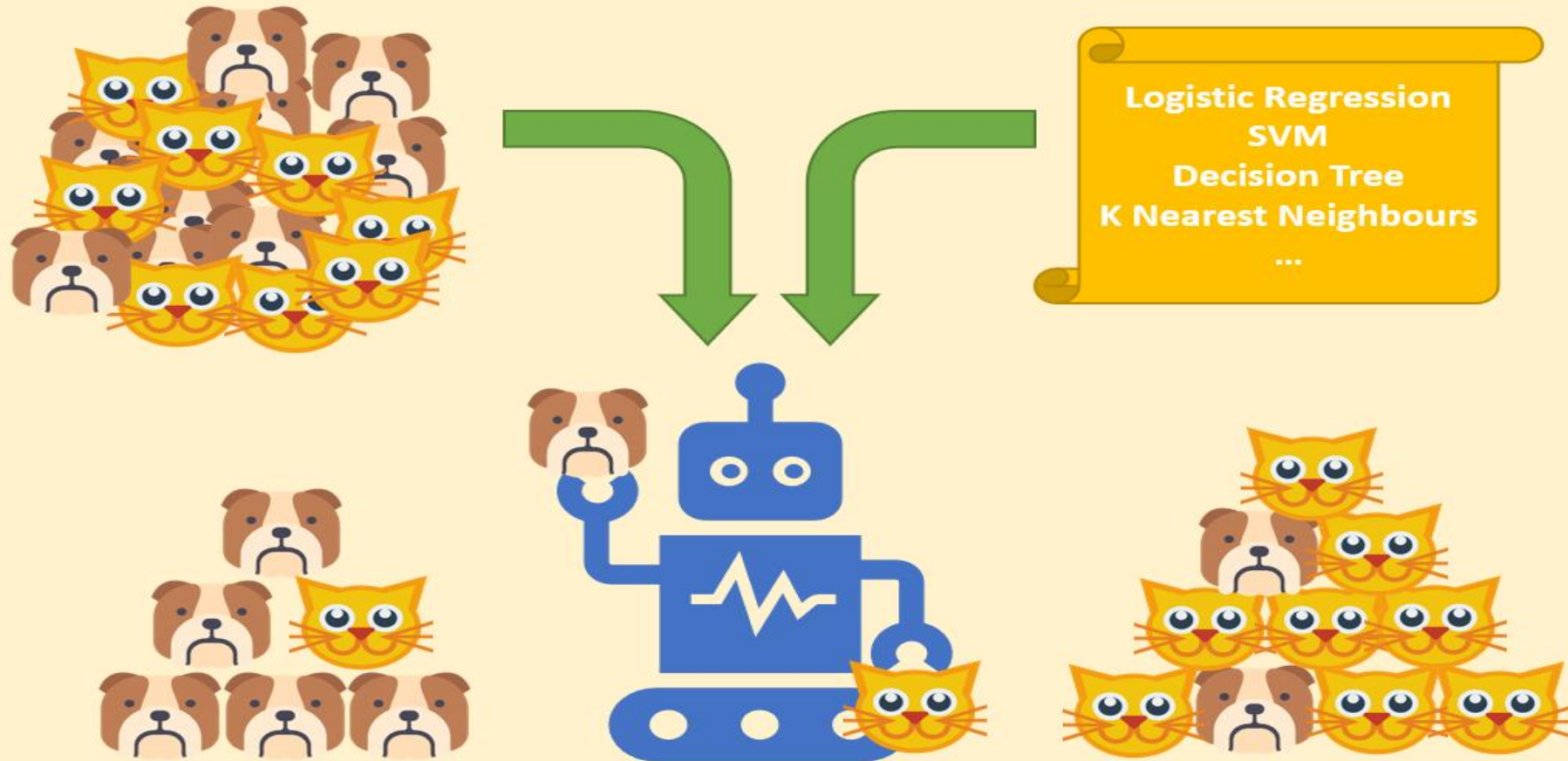
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# Classification (Supervised Learning)



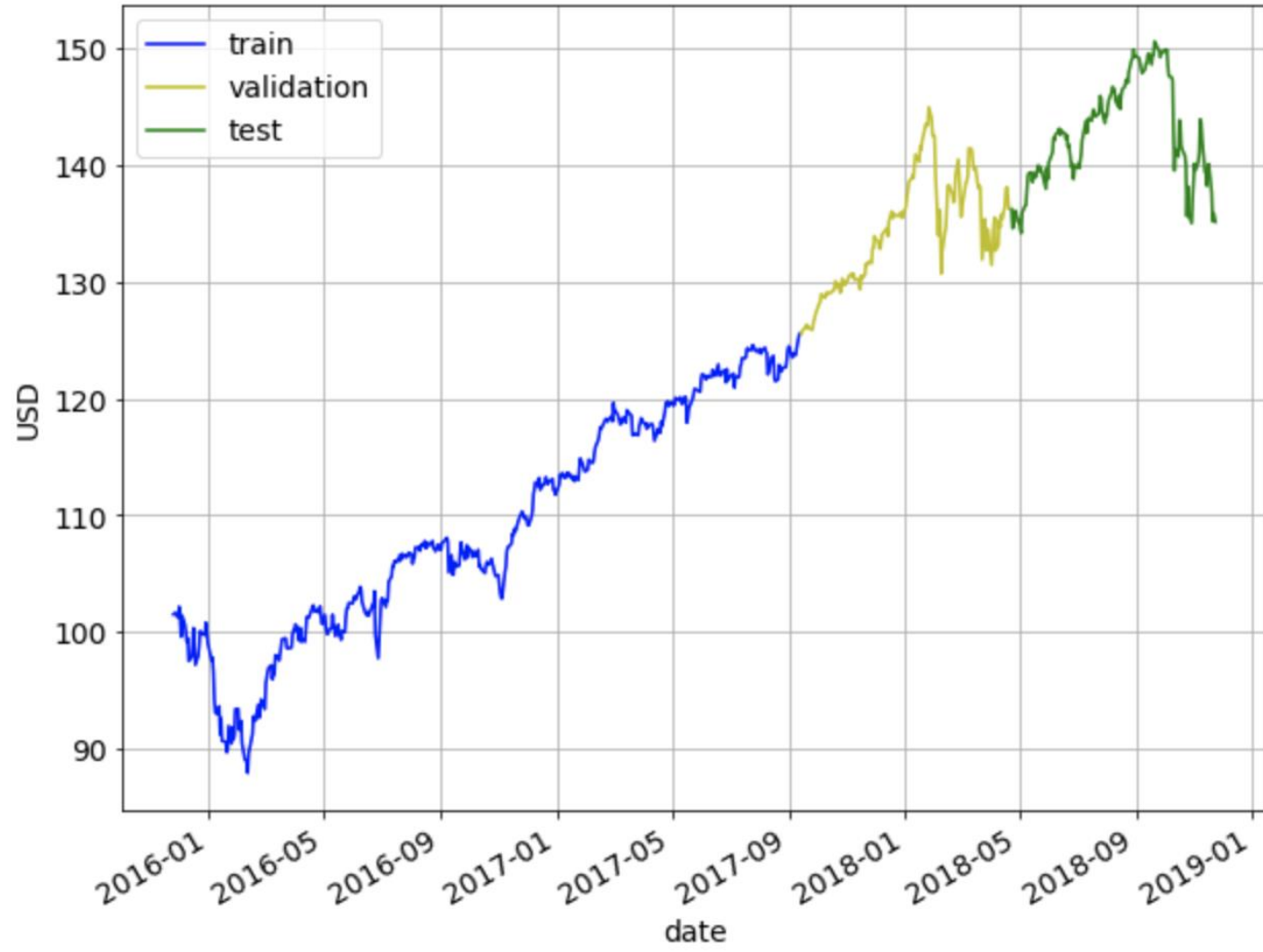
# Classification (Supervised Learning)



# Categories in AI

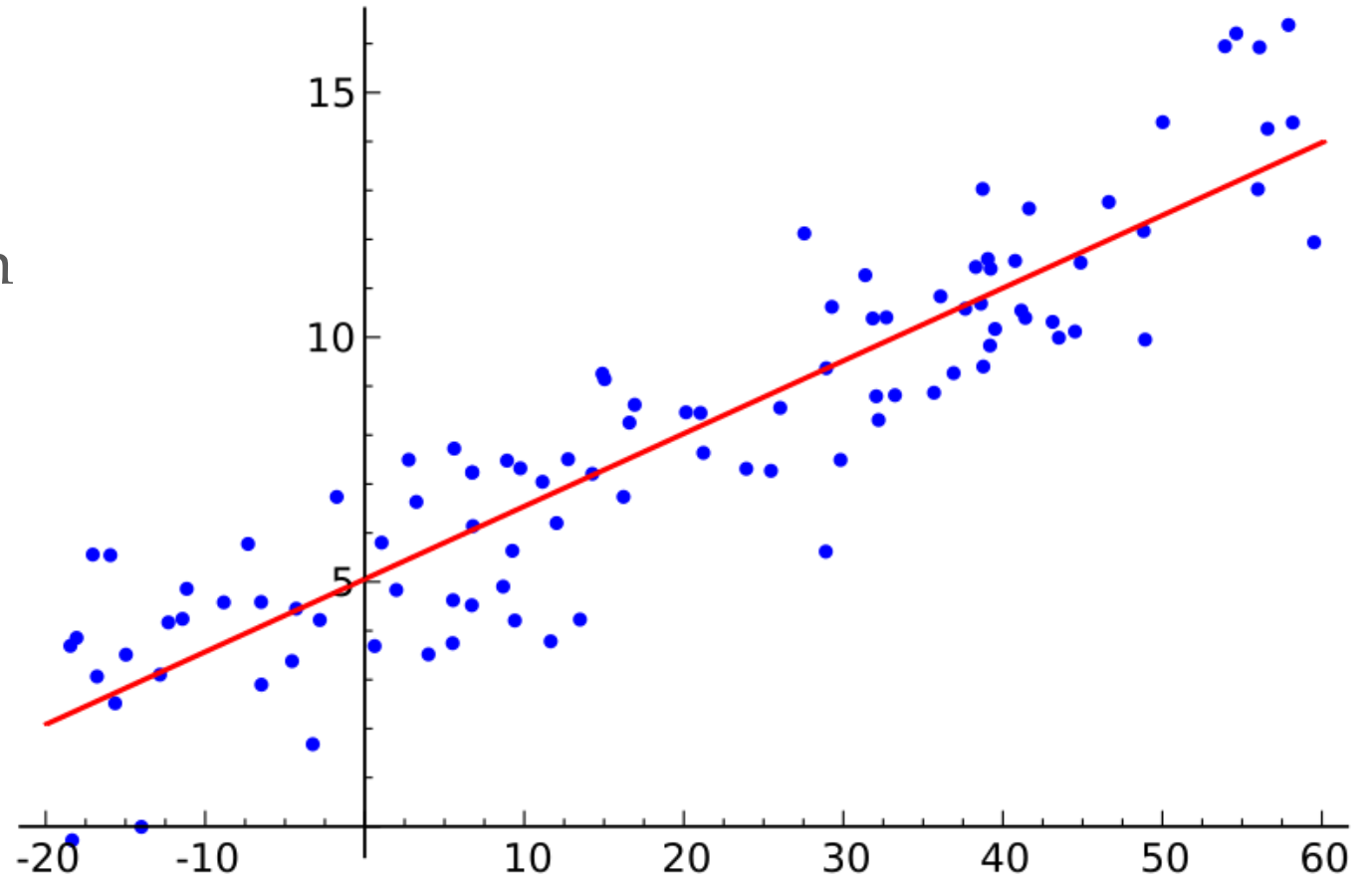
- *Clustering*
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# Regression



# Regression

- Sale's Prediction
- Weather Forecast
- Stock Exchange Prediction
- ...



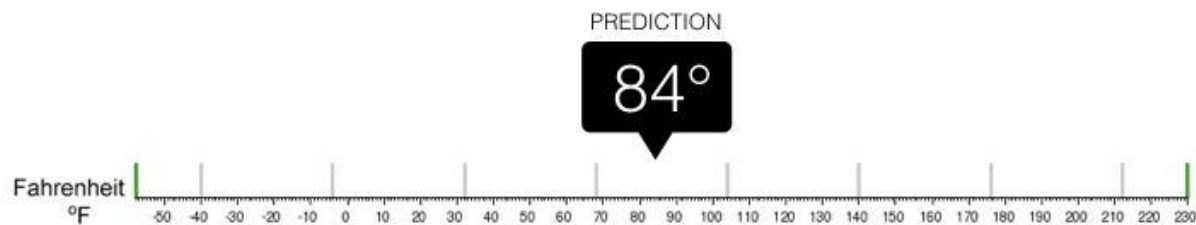


# Regression



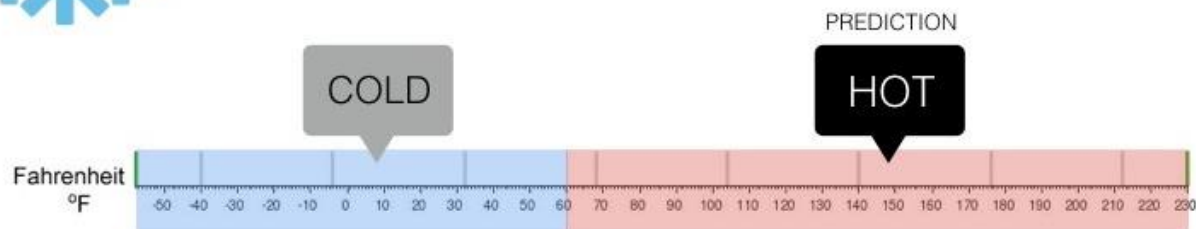
## Regression

What is the temperature going to be tomorrow?



## Classification

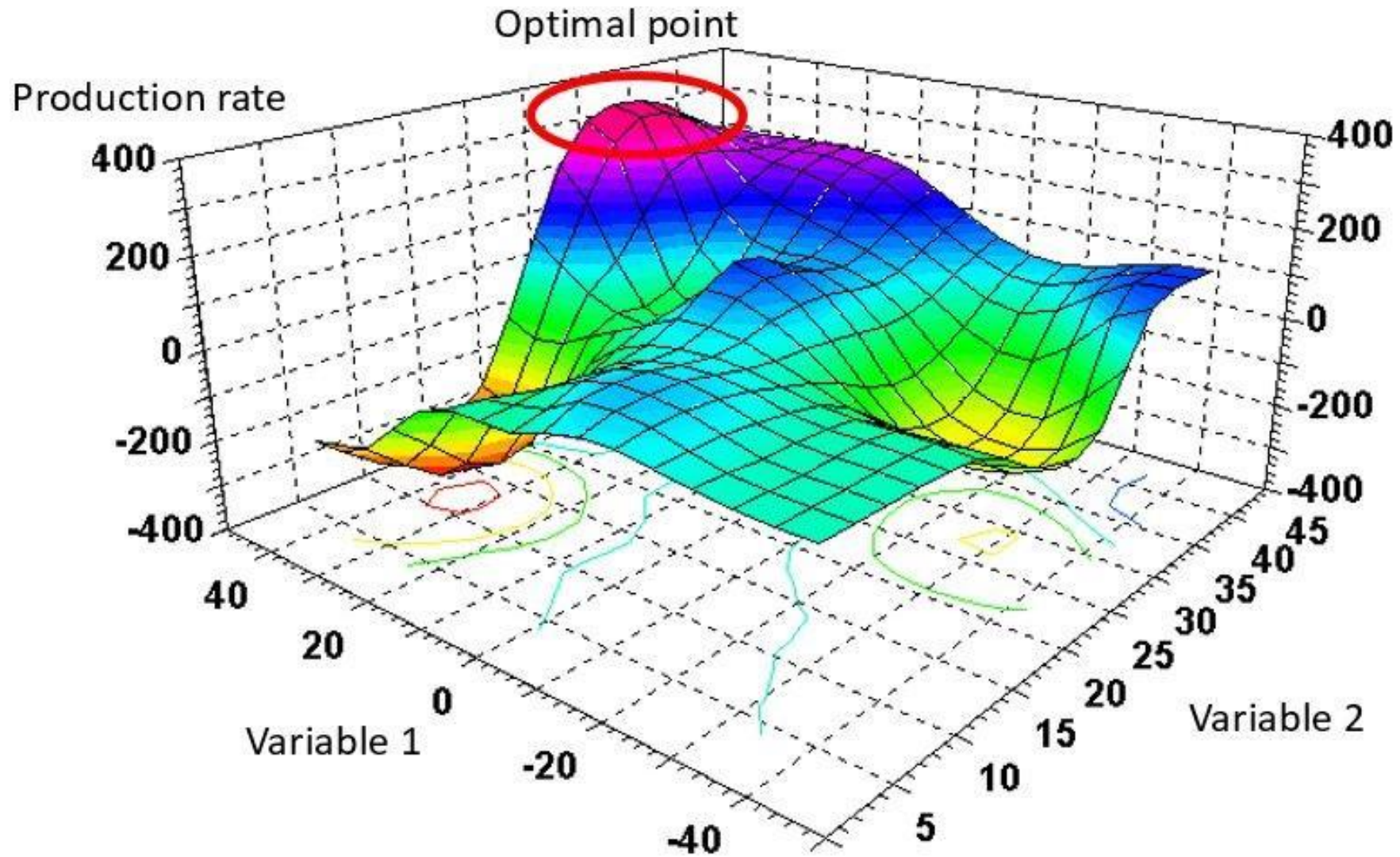
Will it be Cold or Hot tomorrow?



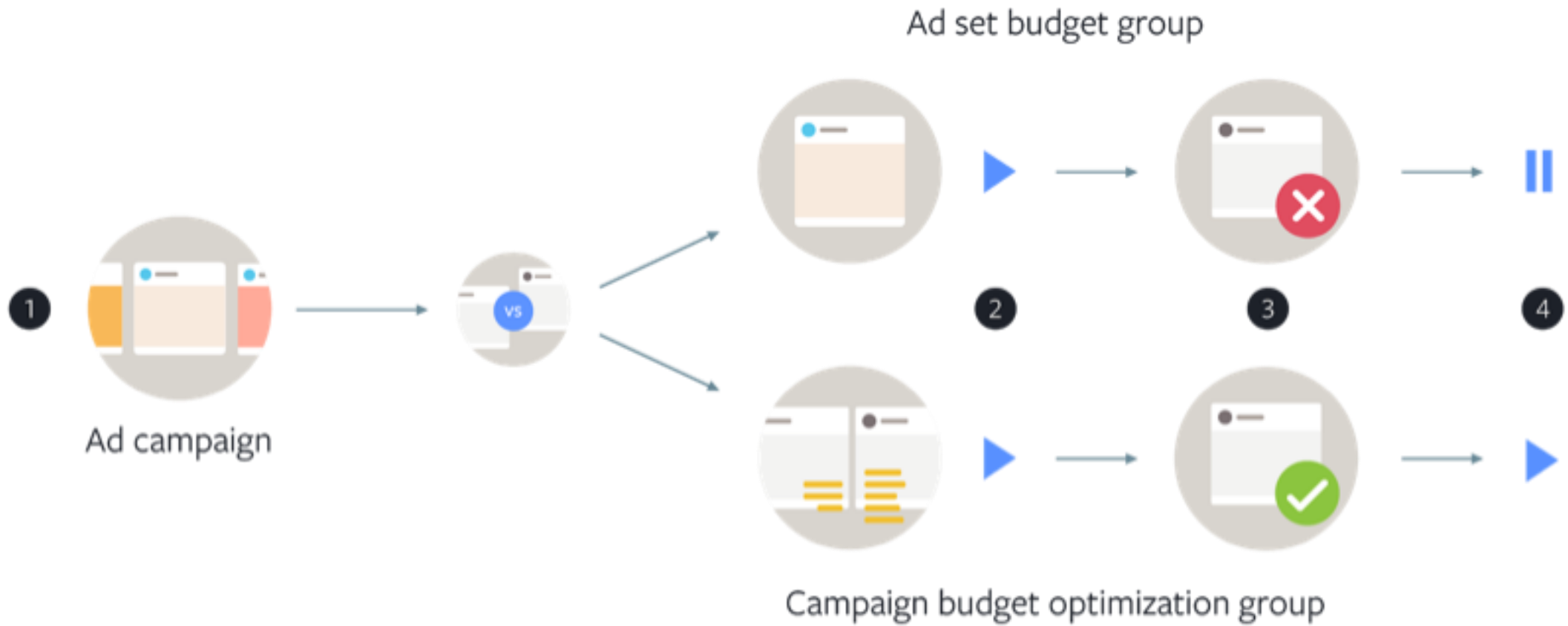
# Categories in AI

- *Clustering*
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# Optimization



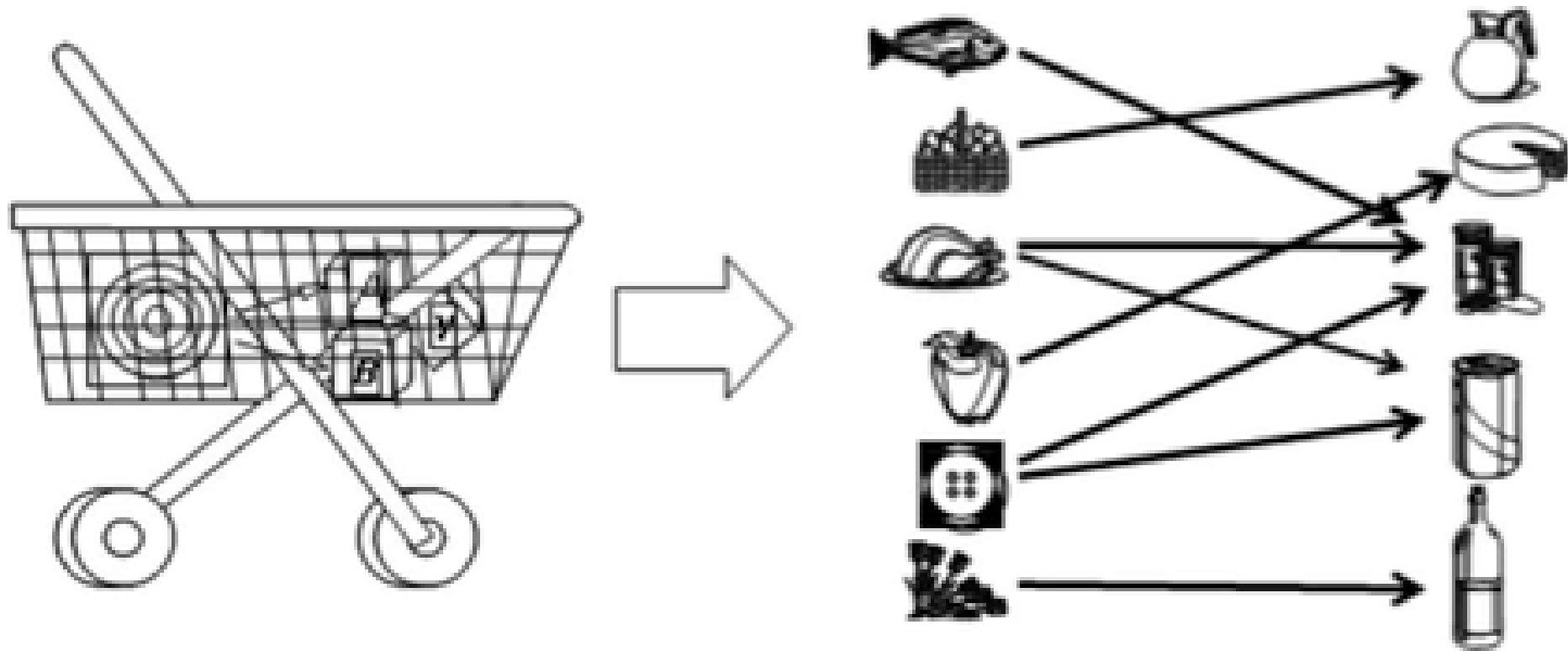
# Optimization



# Categories in AI

- *Clustering*
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# Categories in AI



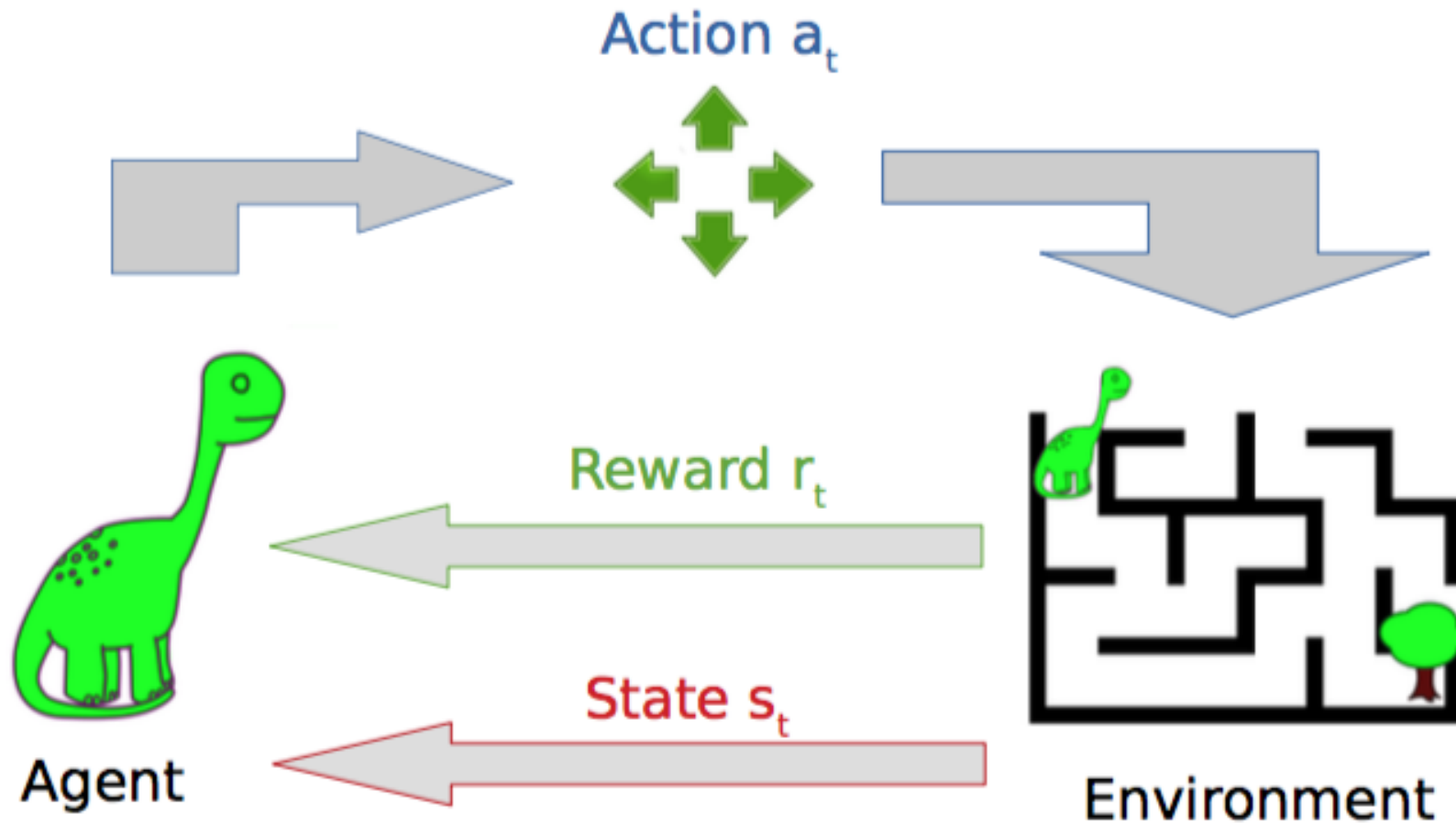
*98% of people who purchased items A and B  
also purchased item C*

# Categories in AI

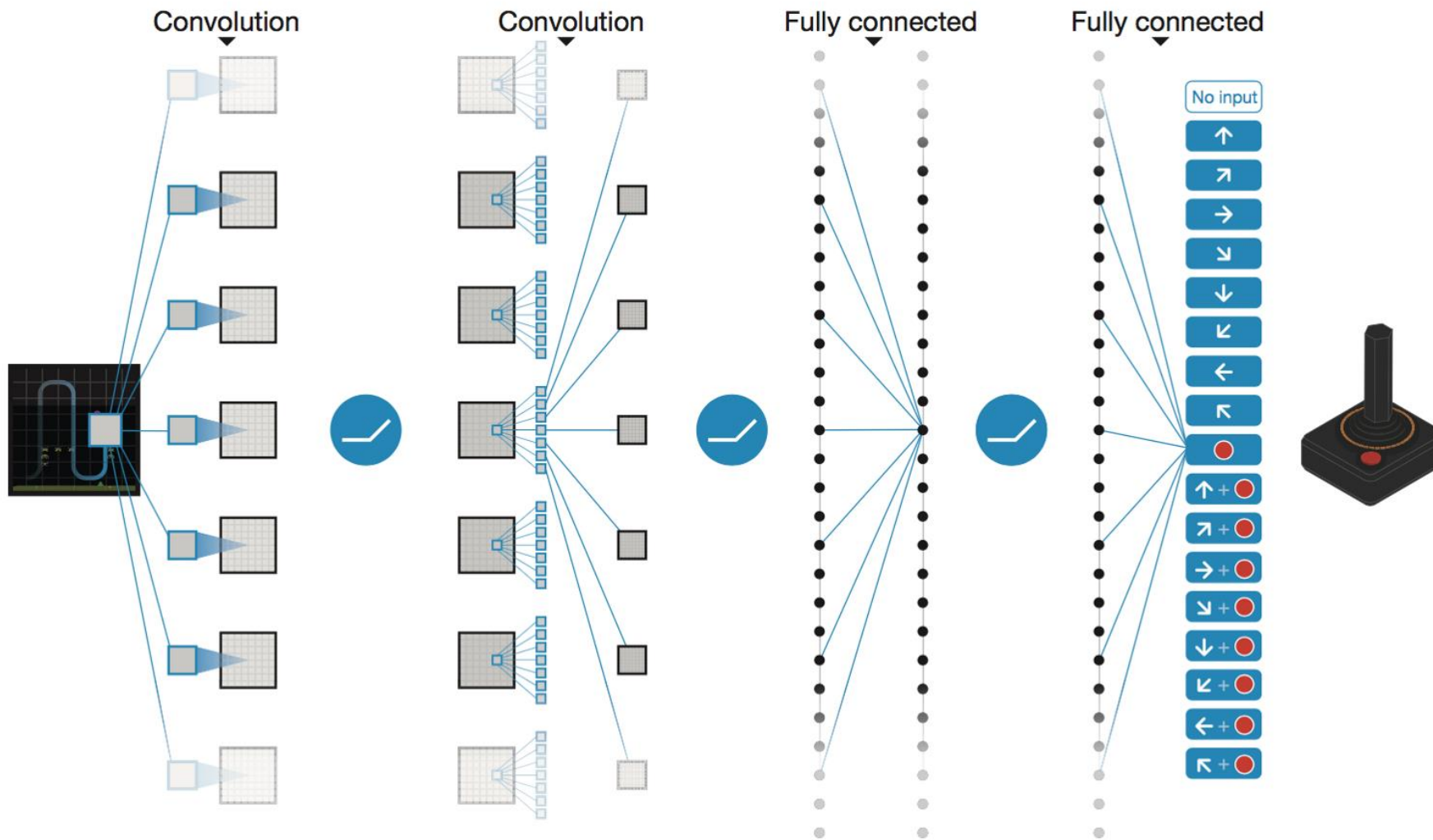
- *Clustering*
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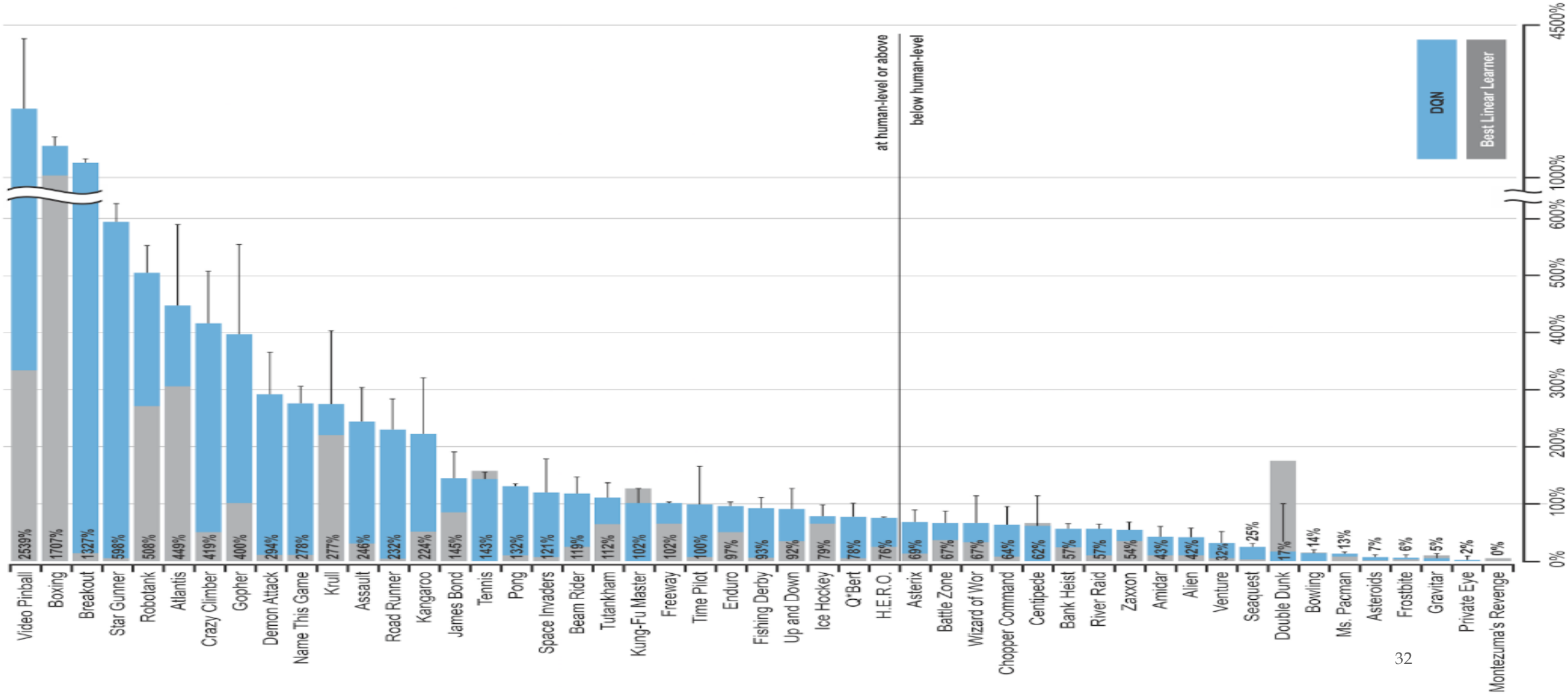
# Reinforcement Learning



# Reinforcement Learning



# Reinforcement Learning



# Autonomous Self-Driving Cars





# How to Learn Artificial Intelligence

## Start with Math & Statistics

- *Math, Math, Math*
- *If you want to learn AI, and apply them efficiently, you need to be friend with "MATH".*

# How to Learn Artificial Intelligence

## Programming Languages

- *Intelligent system is nothing other than a software, therefore you need to learn computer programming.*
- *Today, the following programming languages are being used the most for Artificial Intelligence:*
  - *Python*
  - *Go! Lang*
  - *R*
  - *Julia*
  - *etc.*



# How to Learn Artificial Intelligence

## Supplementary Tools

- *Database / Big Data: Using data is inevitable in AI, so, the knowledge of database and SQL is mandatory.*
- *AI / Stats / Math tools: There are various tools that can be a help to implement intelligent systems:*
  - *Rapid Miner*
  - *Weka*
  - *SPSS*
  - *Matlab*

# Future of Artificial Intelligence

## Artificial General Intelligence (AGI)

Having an intelligent system which can be suitable for anything and any purpose.

- *Assistant Robots*





# Future of Artificial Intelligence

## Autonomous Driving

Cars are becoming more and more intelligent to bring more comfort and safety.

- *Pedestrian Detection*
- *Intelligent Cruise Control*
- *Voice Assistance*
- *Auto Parallel Park*

# Future of Artificial Intelligence

## Emotional Intelligence

Intelligent systems are becoming more emotional aware to interact with human being effectively.

They tend to understand you and your emotions and mimic a proper emotion in response.



# AI can be FUN...

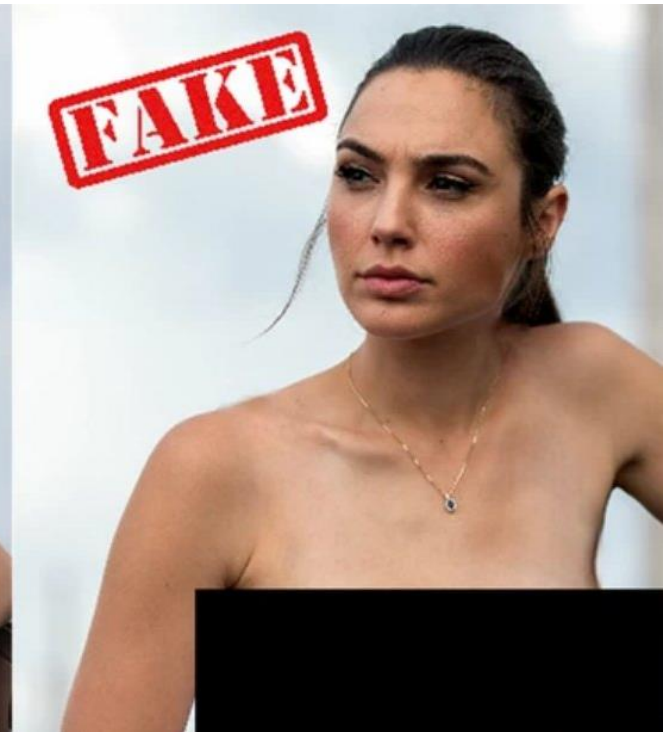
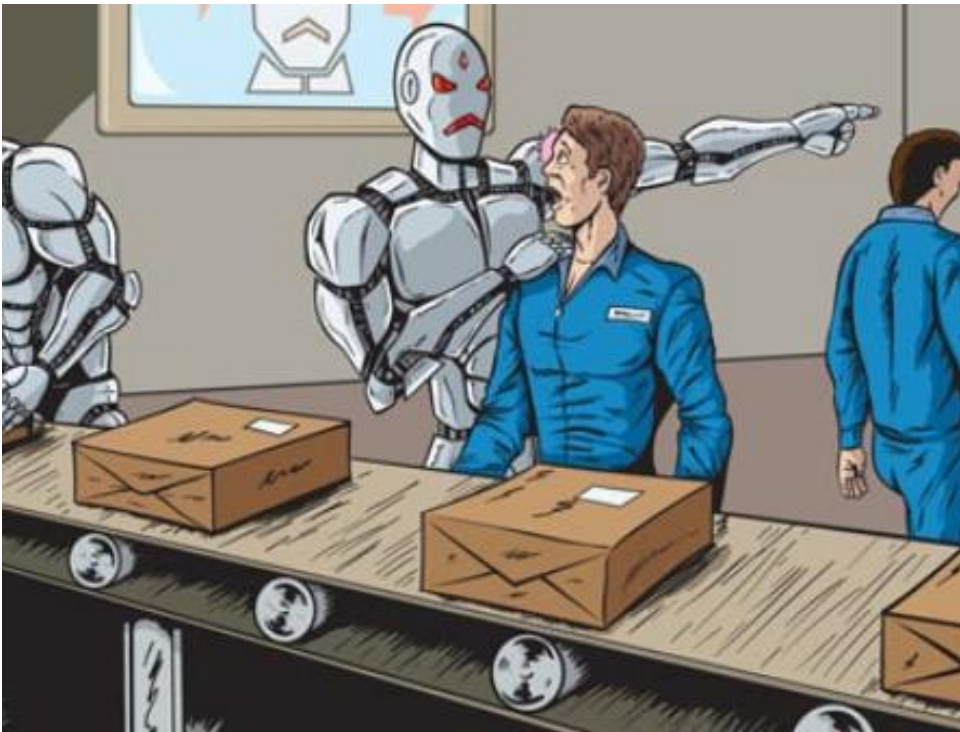


FaceApp



and Dangerous!

AI can become unethical and dangerous if it is trained and used for those purposes.

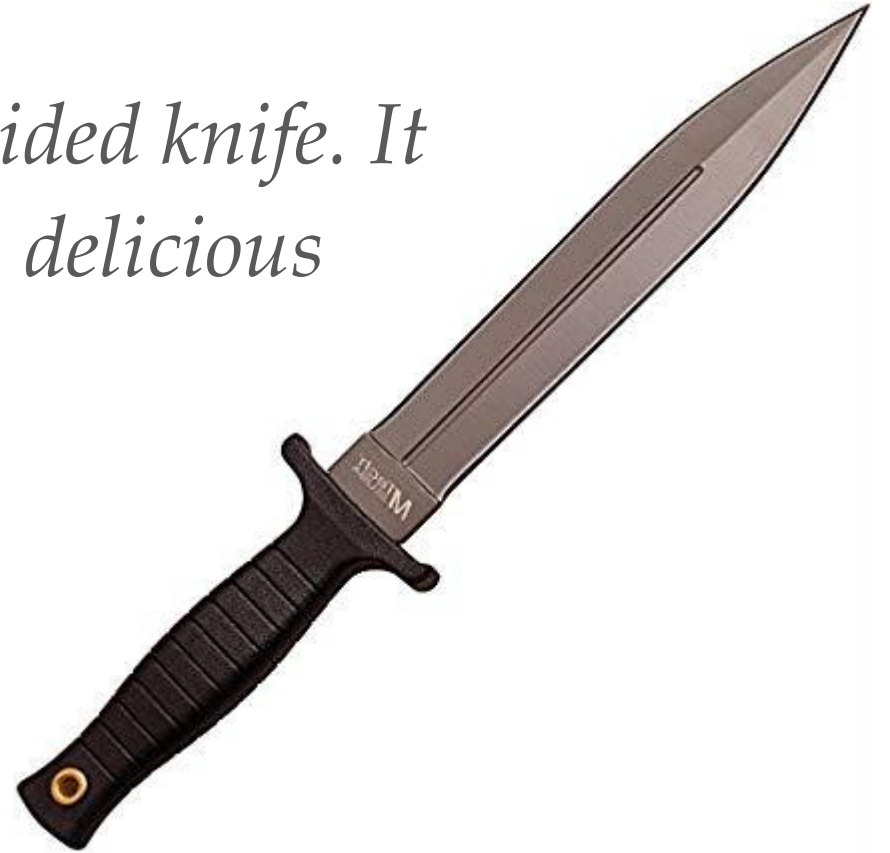


Deepfakes - Deep Nude

## Last Word...

*“Artificial Intelligence is a double-sided knife. It is up to you how to use it. To cook a delicious meal, or to threat and kill.”*

*– Kaveh Bakhtiyari*



# PAX Stress Resilience: Stress can take a toll on your health!

- Reduces the negative effects of stress in daily life and improves your coping capabilities
- Helps you to **track** your mood & stress and gives personalized **recommendations** for you

## PAX Stress Resilience



**Study Participants Wanted**

Testing App for Mood and Stress Tracking  
A Health Recommender Systems

The image shows a hand holding a smartphone displaying the PAX Stress Resilience app interface. The screen shows a "PAX Home" header, a "score: 100" indicator, and a "Personalized Board" with various icons. Below this is a "Custom Visualization" section with a text box and a "Go Home" button. At the bottom, there are several circular icons for "Mood", "Stress", and "Recommendations".

<http://tinyurl.com/paxstress>



More information:

[https://pax-web.interactivesystems.info/new\\_index.html](https://pax-web.interactivesystems.info/new_index.html)

PAX Stress Resilience at Google Play Store:

<https://play.google.com/store/apps/details?id=info.interactivesystems.pax>

Q&A

