

Intro to Artificial Intelligence

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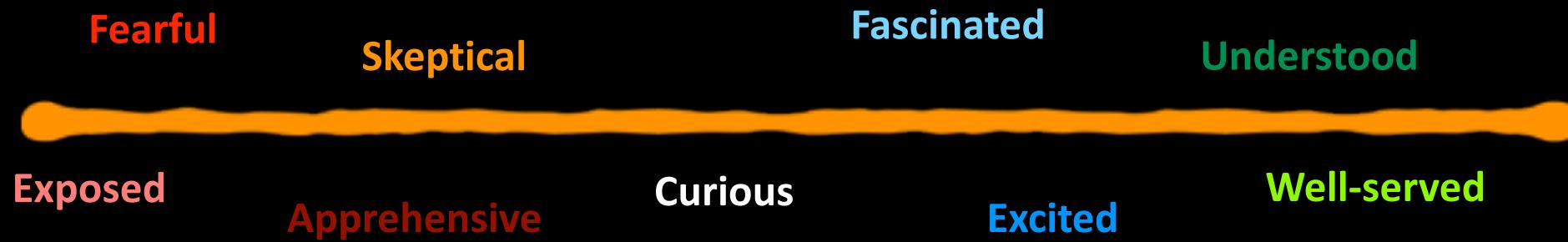
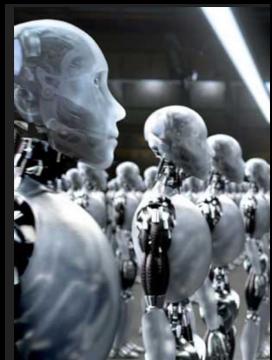
CU



What is AI?

AI Perception

What do people feel about AI?



What we know



Exercise 1

How is AI being used today?

Why Machine Learning?

Traditional Programming



AI-Machine Learning



AI provides systems the ability to **automatically** learn from **experience**
(without being programmed)

Intelligence demonstrated
by CU Students



Exercise 2

PB & J Recipe

Exercise 1

Program how to make a Peanut Butter & Jelly sandwich

1. Get ingredients (PB, Jelly, Bread)
2. Get cooking utensils (plate, knives)
3. Get two slices of bread
4. Open PB, Jelly jars
5. With a knife spread 2 Tablespoons of peanut butter on one piece of bread
6. With a different knife, spread 2 Tablespoons of jelly on the other slice of bread
7. Put the slices together
8. Toddler adaptation: cut off crusts before serving.
9. Place on plate & serve



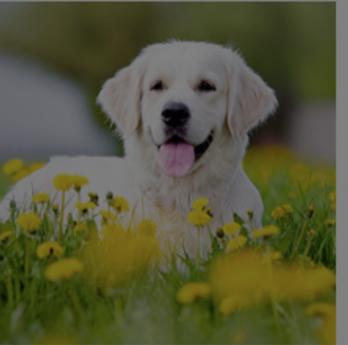
Exercise 3

Machine Learning.

Sample



Label



dog



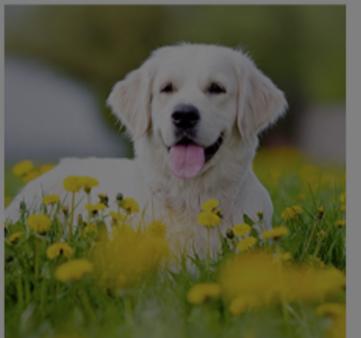
cat



horse

Human Learning:

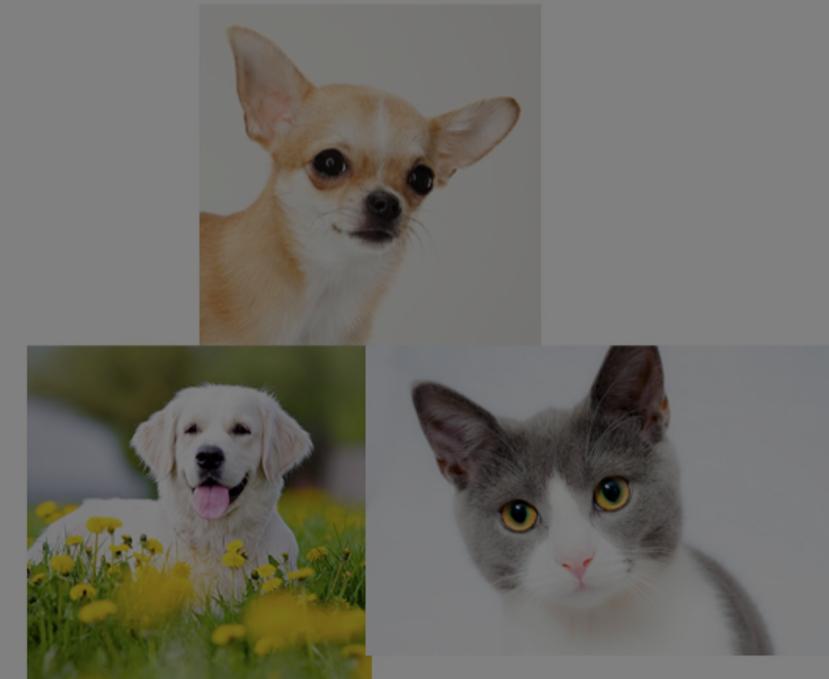
We learn through



Cat or Dogs

Long Ear Black nose

dog



Machine Learning:

Sample



Label



dog



cat



horse

Human Learning:

We learn through



Long Ear Black nose

dog



Examples

Diagrams

Comparisons

Exercise 4

A photograph of a highway scene. In the foreground, the side of a white semi-truck is visible, showing its trailer and rear wheels. The truck is positioned on the right side of the frame. In the middle ground, a two-lane highway curves to the left. A yellow diamond-shaped road sign with a black silhouette of a car on a winding road is mounted on a pole on the left side of the highway. The background consists of a dense forest of green trees under a clear sky.

Passing truck in
highway

Passing truck in highway

Don't Follow Closely Behind Prior to Passing

- As you prepare to pass, keep a healthy distance between your car and the truck in front of you. At minimum, 30 feet should separate the two vehicles. Signal clearly to indicate your next move.

Pass in the Left Lane

- The left lane is referred to as the 'passing lane' for a reason; it's the safest place to pass any vehicle, but particularly trucks and buses. It's frustrating to be stuck behind a slow truck in the left lane, but resist the urge to pass on the right side.

Don't Linger in the Truck's Blind Spot

- Trucks have huge blind spots on both sides. Pass promptly while still abiding by the speed limit. Don't hang out in the blind spot area, which, in the left (passing) lane, constitutes the truck's entire front half.

Recognition

- With GPS navigation, HiRes cameras, Laser-radar cameras: Location, speed of trucks, road conditions, emergency lane
- With Image Recognition: Turn signal (!lamp), paper or debris on the road

Insights

- Data is fed into multiple CPUs + collected data + rules
- Manufacturer knows who has the right of the way, when trucks can pass + MM miles driven have feedback on different driving style

Action (Cognitive Decision)

- Assist (alerts driver)
- Act (Pass or Not pass, Measure decision effects, feedback loop, and share w other cars)

Agenda

Intro

Core

Closing

Core

1. Education --- how do we change the way we teach both in terms of onsite job training and in the classroom
2. Healthcare -- will AI be part of the patient experience, navigating surgeries on behalf of the physician, does AI take the lead, from diagnoses to procedures
3. Finance -- in business, how will it affect how we do RFPs (we are doing it with a person now), how will AI enable us to look at work plans better and look at fee structures, etc.
4. Law -- contract law, how will it help us review internal contracts and evaluate risk
5. Transportation – is it important or will take control, roadways or beyond

Part 3:
AI in Our Lives
(5 mins)

AI benefits
(healthcare, safety,
entertainment)

AI challenges
(mistakes, learning
from bad data)

Classroom
interaction:
"Pros and Cons
Discussion"

Part 4:
Your Future with AI
(3 mins)

AI careers
(what kinds of jobs
you could have
working with AI)

The importance of
being tech-savvy in
the future

Conclusion
(2 minutes)

Recap of what AI is
and why it's
important

Encouragement to
learn more and stay
curious

Farewell and any final
questions



To Update for this audience

Generative AI

GPT-3

Prompt:

Write a tagline for an ice cream shop.

Response:

We serve up smiles with every scoop!

Codex

Prompt:

```
Table customers, columns =  
[CustomerId, FirstName,  
LastName, Company, Address,  
City, State, Country,  
PostalCode]
```

Create a SQL query for all customers in Texas named Jane
query =

Response:

```
SELECT *  
FROM customers  
WHERE State = 'TX' AND  
FirstName = 'Jane'
```

DALL·E

Prompt: A white Siamese cat

Response:

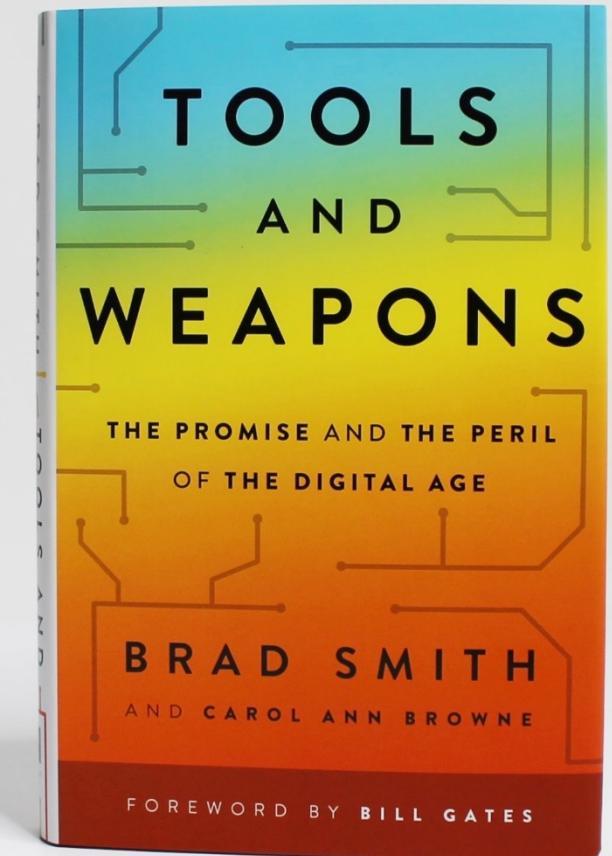


Why responsible AI?

“The more powerful the tool, the greater the benefit or damage it can cause...Technology innovation is not going to slow down. The work to manage it needs to speed up.”

Brad Smith

President and Chief Legal Officer, Microsoft



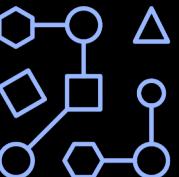
Drives governance policy effectiveness while tracking how data is used and its value to the company

Data Steward

Builds data pipelines that power dashboards and data platforms while ensuring high quality



Data Engineer



Prepares data to tease out the insights they're looking for, without IT involvement

Data Scientist



Business Analyst

Works with data to apply insights to the business strategy

App Developer

Makes insights immediately actionable and adds intelligence to apps in straightforward manner

Demos

Future of AI Example (Semantic Analysis)

The Wining Shot

The soccer game was nearly over. The two teams were tied, one to one.

Alice kicked the ball. Oops! She kicked it the wrong way.

"What a bad kick," Alice thought.

But wait!. Her teammate John jumped to stop the ball. The ball went off John into the goal!.

Alice's team won the game. Hooray! It was not a bad kick, after all.

Who won the game?

Why?

Future of AI Example

The Wining Shot

The soccer game was nearly over. **The two teams were tied, one to one.**

Alice kicked the ball. Oops! She kicked it the wrong way.

"What a bad kick," Alice thought.

But wait!. Her teammate John jumped to stop the ball. **The ball went off John into the goal!!.**

Alice's team won the game. Hooray! It was not a bad kick, after all.

Who won the game?

Answer: Alice's team
Correct

Explanation: Alice's team won the game because Alice's team had more points than the other team

✓ **Correct**

ChatGPT

JE

read this: The Wining Shot

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ChatGPT

JE who won the game

 Alice's team won the game, even though Alice initially thought she had made a bad kick. John's quick thinking and intervention helped the team to score the winning goal, and they were able to secure victory in the game.

JE why?

 Alice's team won the game because John was able to use his skills and reflexes to intercept the ball, even though Alice's kick was not aimed in the right direction. John's intervention caused the ball to go into the goal, which resulted in a score for Alice's team. Since this happened near the end of the game and there was no time left for the other team to catch up, Alice's team won the game with a score of 2-1.

Q&A

Applied Deep Learning II

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<https://github.com/iportilla/translation>