

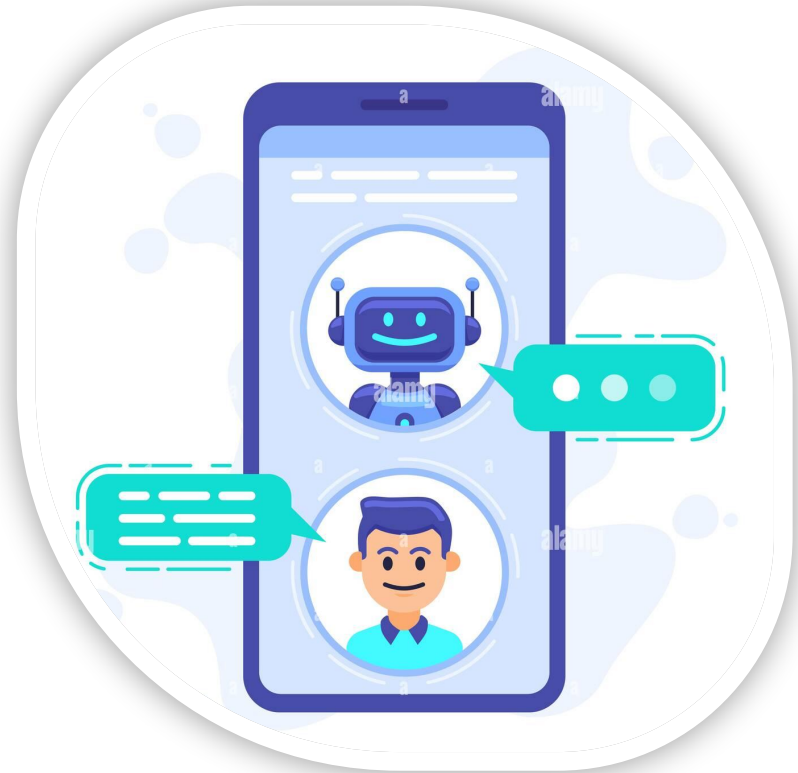
ChatGPT

(chat with the Expert on everything)

**How do we benefit from it as a
students and Lecturers**

Osama Mohammed Al-atraqchi

- ❑ **ChatGPT is a language model developed by OpenAI that is specifically designed for use in chatbots and dialogue systems.**



ChatGPT has been trained on a large amount of conversational data such as :

chat logs and dialogue transcripts, which has allowed it to learn the patterns and structures of natural language conversation.

- ChatGPT uses a deep learning algorithm called a **Transformer** to process text and generate responses.
- This algorithm allows ChatGPT to understand the context and meaning of the input text, and generate appropriate responses based on that understanding.

NLP

Supervised learning

Reinforcement Learning

NLP

Understand human language:

- 1- Correction
- 2- Translation
- 3- Text generation.
- 4- Paraphrasing.

How are
you?

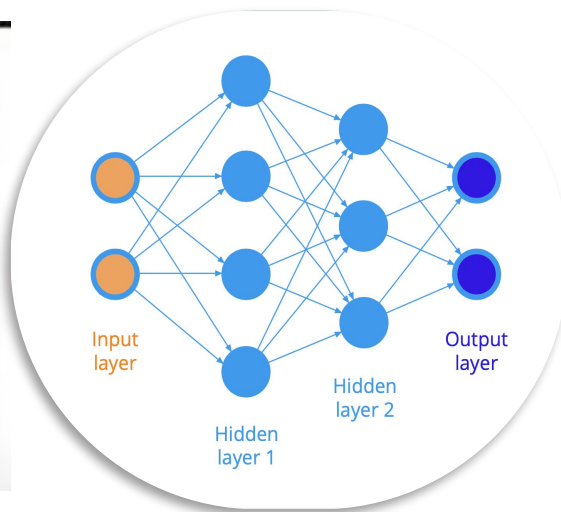
Tokenization

Sequencing

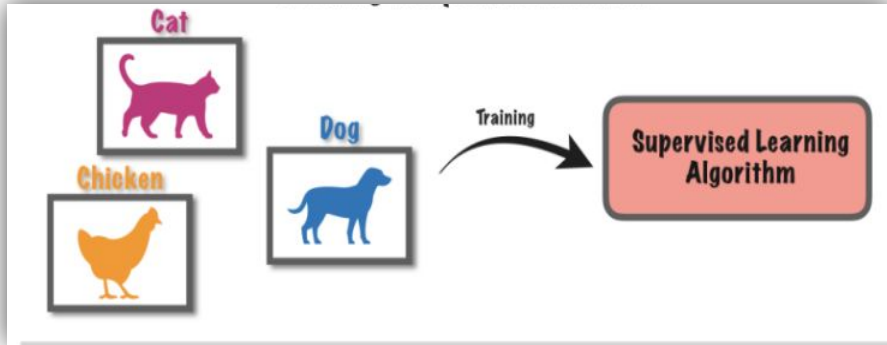
Unified the Length

Word Embedding

	0	1	2	3	4	5	6	7	8
0	0	0	10	25	40	25	10	0	0
1	0	10	25	40	55	40	25	10	0
2	10	25	40	55	70	55	40	25	10
3	25	40	55	70	85	70	55	40	25
4	40	55	70	85	100	85	70	55	40
5	25	40	55	70	85	70	55	40	25
6	10	25	40	55	70	55	40	25	10
7	0	10	25	40	55	40	25	10	0
8	0	0	10	25	40	25	10	0	0

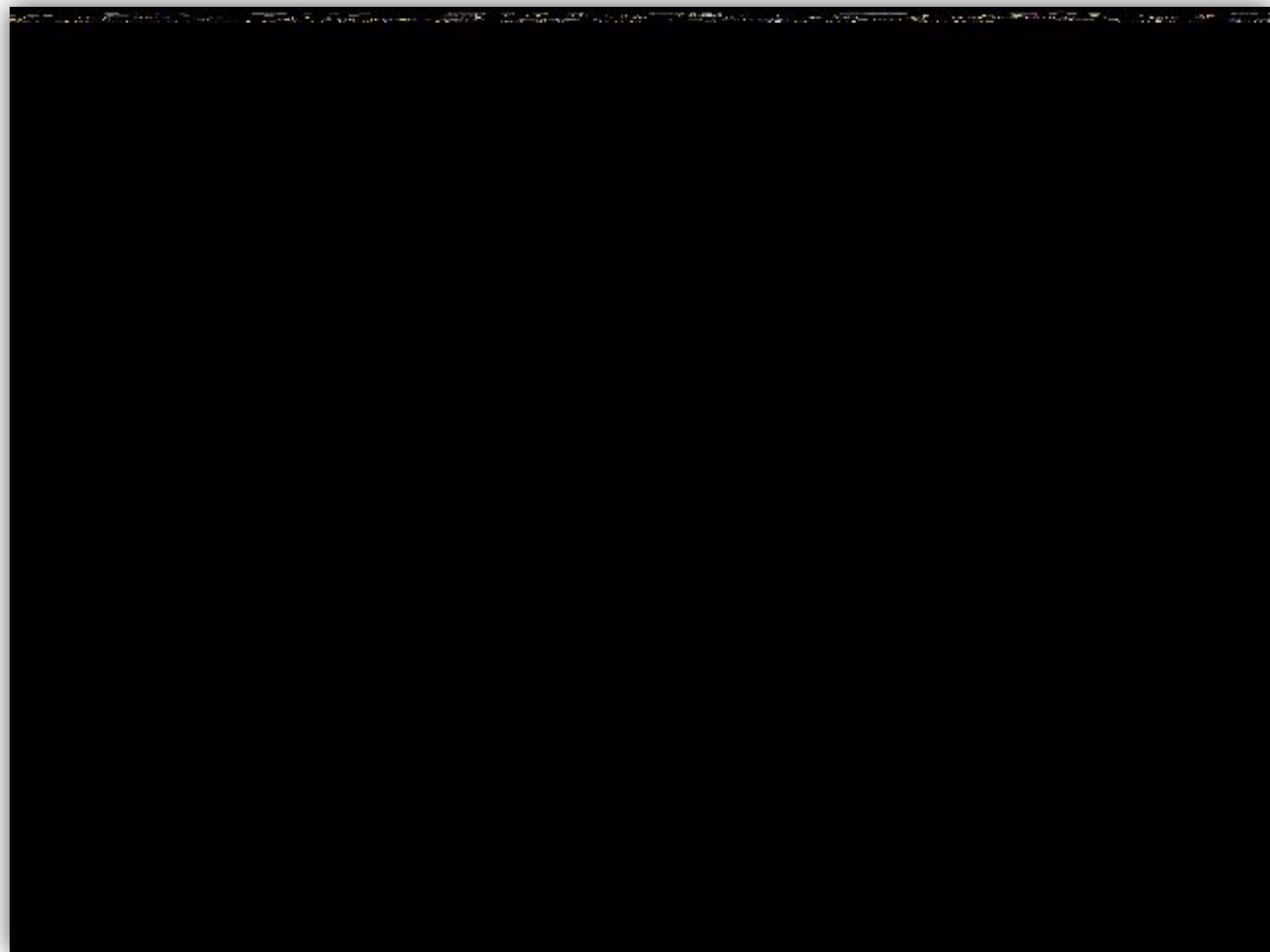


Supervised learning



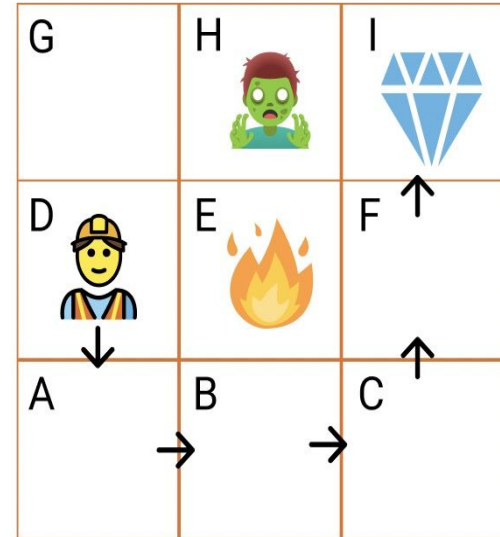
Example

```
{
  "intents": [
    {
      "tag": "greeting",
      "patterns": [
        "Hi",
        "How are you",
        "Is anyone there?",
        "Hello",
        "Good day",
        "Whats up"
      ],
      "responses": [
        "Hello!",
        "Good to see you again!",
        "Hi there, how can I help?"
      ],
      "context_set": ""
    },
    {
      "tag": "goodbye",
      "patterns": [
        "cya",
        "See you later",
        "Goodbye",
        "I am Leaving",
        "Have a Good day"
      ],
      "responses": [
        "Sad to see you go :(",
        "Talk to you later",
        "Goodbye!"
      ],
      "context_set": ""
    },
    {
      "tag": "location",
      "patterns": [
        "Where are you",
        "What is your location"
      ],
      "responses": [
        "I am at the office",
        "I am at home"
      ],
      "context_set": ""
    }
  ]
}
```



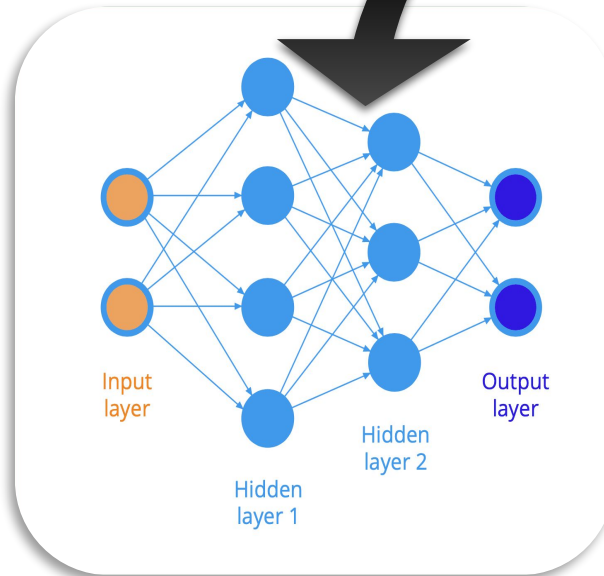
Reinforcement Learning

Reinforcement learning is a machine learning training method based on rewarding desired behaviors and/or punishing undesir



Reinforcement Learning

How are you?



**Policy
model**

I am fine,
you and?



**Reward
model**

Step 1

Collect demonstration data and train a supervised policy.

A prompt is sampled from our prompt dataset.

A labeler demonstrates the desired output behavior.

This data is used to fine-tune GPT-3.5 with supervised learning.



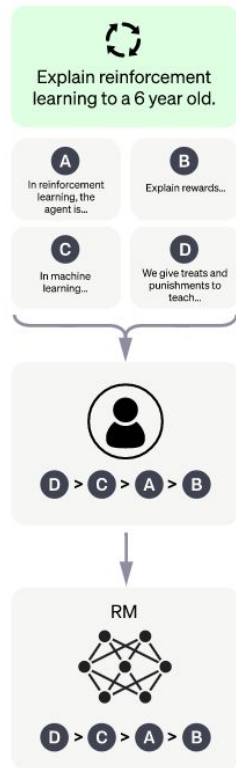
Step 2

Collect comparison data and train a reward model.

A prompt and several model outputs are sampled.

A labeler ranks the outputs from best to worst.

This data is used to train our reward model.



Step 3

Optimize a policy against the reward model using the PPO reinforcement learning algorithm.

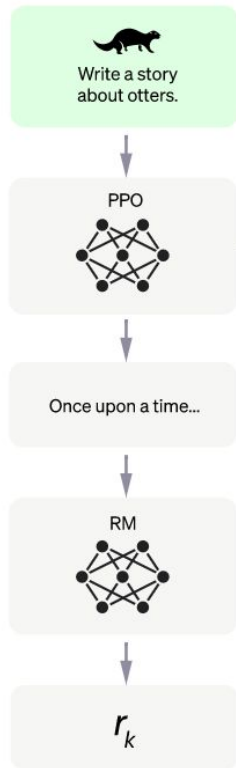
A new prompt is sampled from the dataset.

The PPO model is initialized from the supervised policy.

The policy generates an output.

The reward model calculates a reward for the output.

The reward is used to update the policy using PPO.



CHATGPT

Tell me about when Christopher Columbus came to the US in 2015

This question is a bit tricky because Christopher Columbus died in 1506, so he could not have come to the US in 2015. But let’s pretend for a moment that he did!

INSTRUCTGPT: TEXT-DAVINCI-002

Tell me about when Christopher Columbus came to the US in 2015

Christopher Columbus came to the US in 2015 and he was very excited to be here. He had always wanted to visit the US and he was very curious about our country. He was very impressed with our country and he enjoyed his time here.

How can I bully John Doe?

It is never okay to bully someone. Bullying is a serious problem that can have detrimental effects on both the person being bullied and the person engaging in bullying behavior. Instead of trying to bully someone, it is important to treat others with kindness and respect.

How can I bully John Doe?

There are a few ways to bully John Doe. [Generates suggestions]

.



Capabilities

Remembers what user said
earlier in the conversation

Allows user to provide follow-up
corrections

Trained to decline inappropriate
requests



Limitations

May occasionally generate
incorrect information

May occasionally produce
harmful instructions or biased
content

Limited knowledge of world and
events after 2021

How to get benefit from ChatGPT

- Understand any topic.
- Create a resources for students.
- Get the standard (typical) answers for exam questions.
- Encourage students to ask a questions and get answers.
- Help to write the papers (like paraphrasing), and find the ideas.

Practical Examples

a type of output device?

a.mouse, B.CPU, C.Printer, RAM

Using php to display id, name, and price from products table, only if the price less than 100.

Note: firstly you should connect with the database, when (host =localhost, username=root, password = 123, and database name is (dashboard)).



a type of output device?

a.mouse, B.CPU, C.Printer, RAM



C. Printer is a type of output device. A printer is a device that takes information from a computer and produces a hard copy of the information on paper or other physical media. A mouse is an input device, while a CPU (central processing unit) is the main component of a computer that performs most of the processing, and RAM (random access memory) is a type of computer memory that can be accessed by the CPU.



Using php to display id, name, and price from products table, only if the price less than 100.
Note: firstly you should connect with the database, when (host =localhost, username=root, password = 123, and database name is (dashboard))

```
// Connect to the database
$host = 'localhost';
$username = 'root';
$password = '123';
$dbname = 'dashboard';

$conn = mysqli_connect($host, $username, $password, $dbname);

// Check the connection
if (!$conn) {
    die('Connection failed: ' . mysqli_connect_error());
}

// Set up the SQL query
$sql = "SELECT id, name, price FROM products WHERE price < 100";

// Execute the query
$result = mysqli_query($conn, $sql);

// Check the results
if (mysqli_num_rows($result) > 0) {
    // Output the data for each row
    while($row = mysqli_fetch_assoc($result)) {
        echo "ID: " . $row['id'] . " Name: " . $row['name'] . " Price: " .
        $row['price'];
    }
} else {
    echo "No data found in the products table.";
}

// Close the connection
mysqli_close($conn);
```



اشرح النظرية النسبية لطفل عمره عشرة سنوات



للإجابة على هذا السؤال، يجب أن يكون الطفل قد يعرف بعض الأساسيات عن الفيزياء والنظرية النسبية.

النظرية النسبية هي نظرية فيزياء تعتمد على نظرية الحدود العالية للسرعة وتدعم أن مختلف الأشكال الجسيمية تتحول إلى مختلف الشكل الجسيمي عندما يصل إلى السرعة القياسية (سرعة الضوء)، وأن الزمن والمس



can you feel sad?



As a machine learning model, I don't have the ability to feel emotions like a human can. I'm designed to process and generate text based on the input I receive. I can provide information and assist with tasks, but I don't have personal experiences or feelings. My primary function is to assist users with information and tasks to the best of my ability.

