

IMEC



MT
MCFALLSTECH

GENERATIVE AI

BACKGROUND, USAGE, & LIMITATIONS

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HAVE YOU EVER?



Struggled to find the right words?

Not sure what something is trying to tell you or what something means?

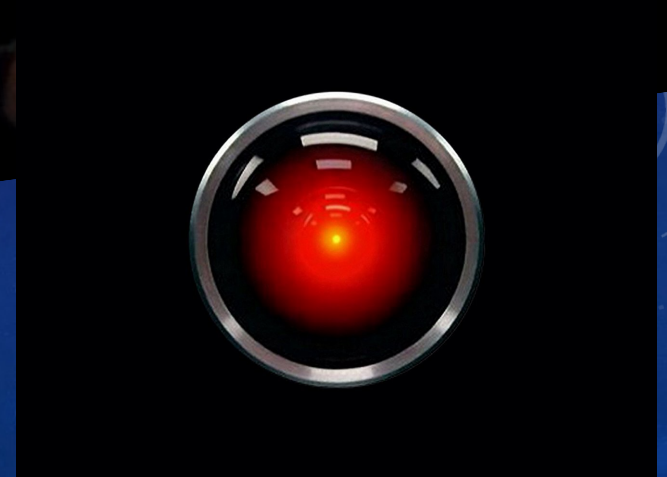
Need some ideas for how to solve a problem?

Want to provide answers to customers (or employees) questions quickly?

WHAT IS GENERATIVE AI?

A transformative technology that can generate new content (text, images, sounds, videos) from learned patterns

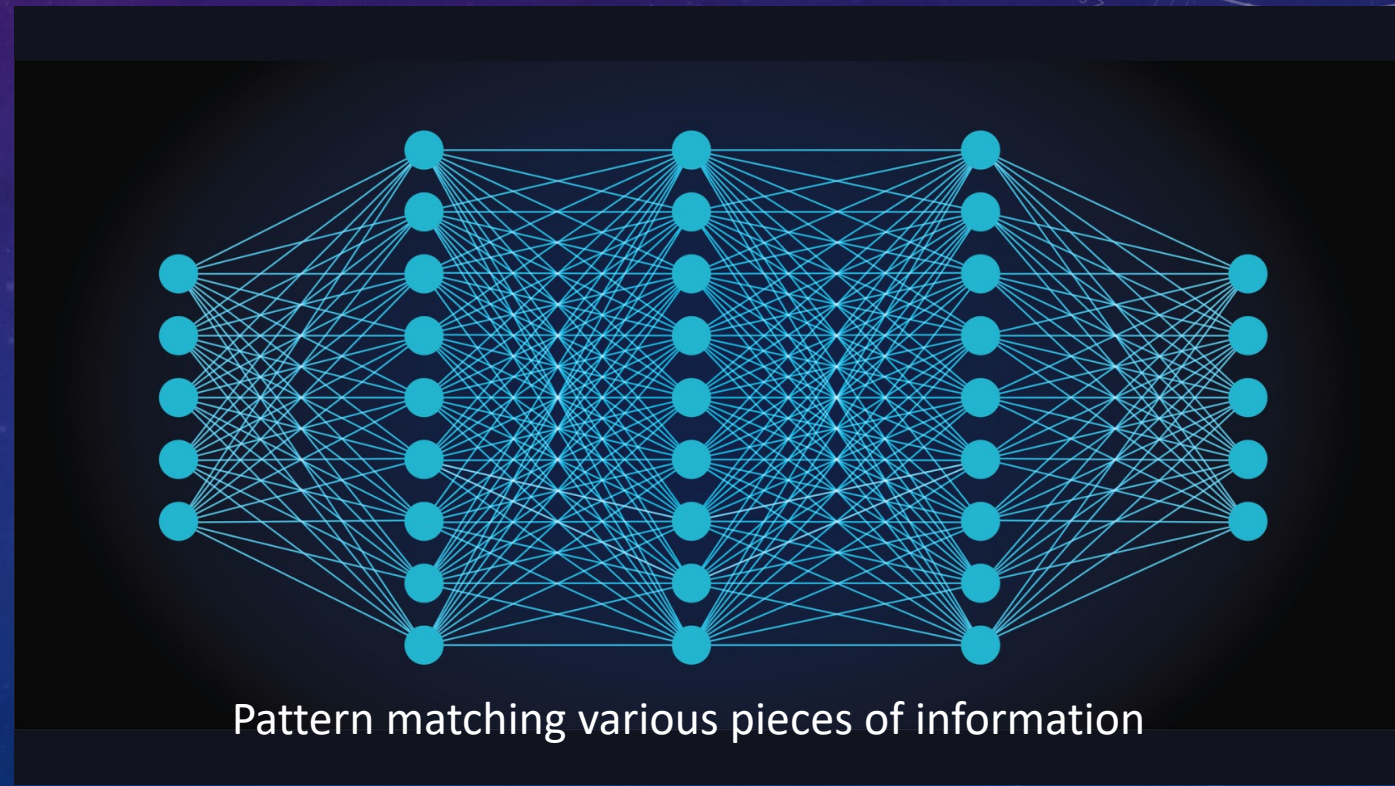
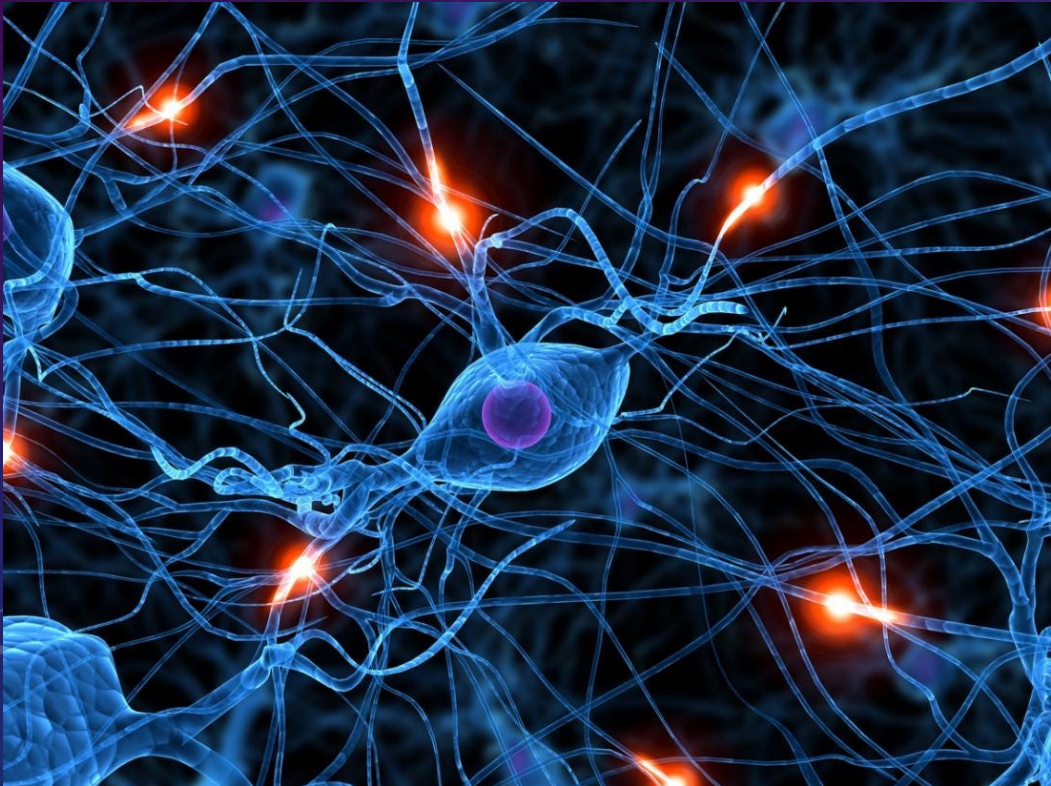
WHAT WAS ONCE SCIENCE FICTION



NEURAL NETWORKS (2014, IAN GOODFELLOW)

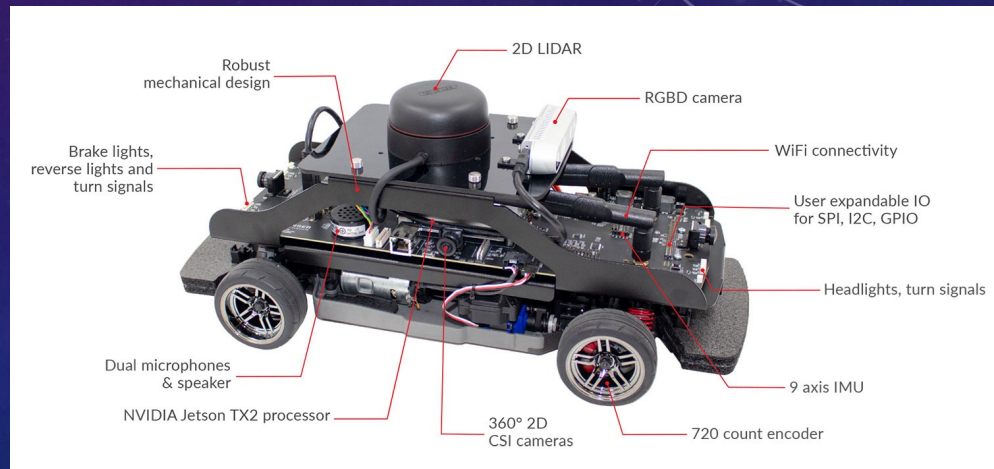
ATTEMPT TO MAKE COMPUTERS BEHAVE LIKE HUMANS

Human Brain
~100 billion neurons

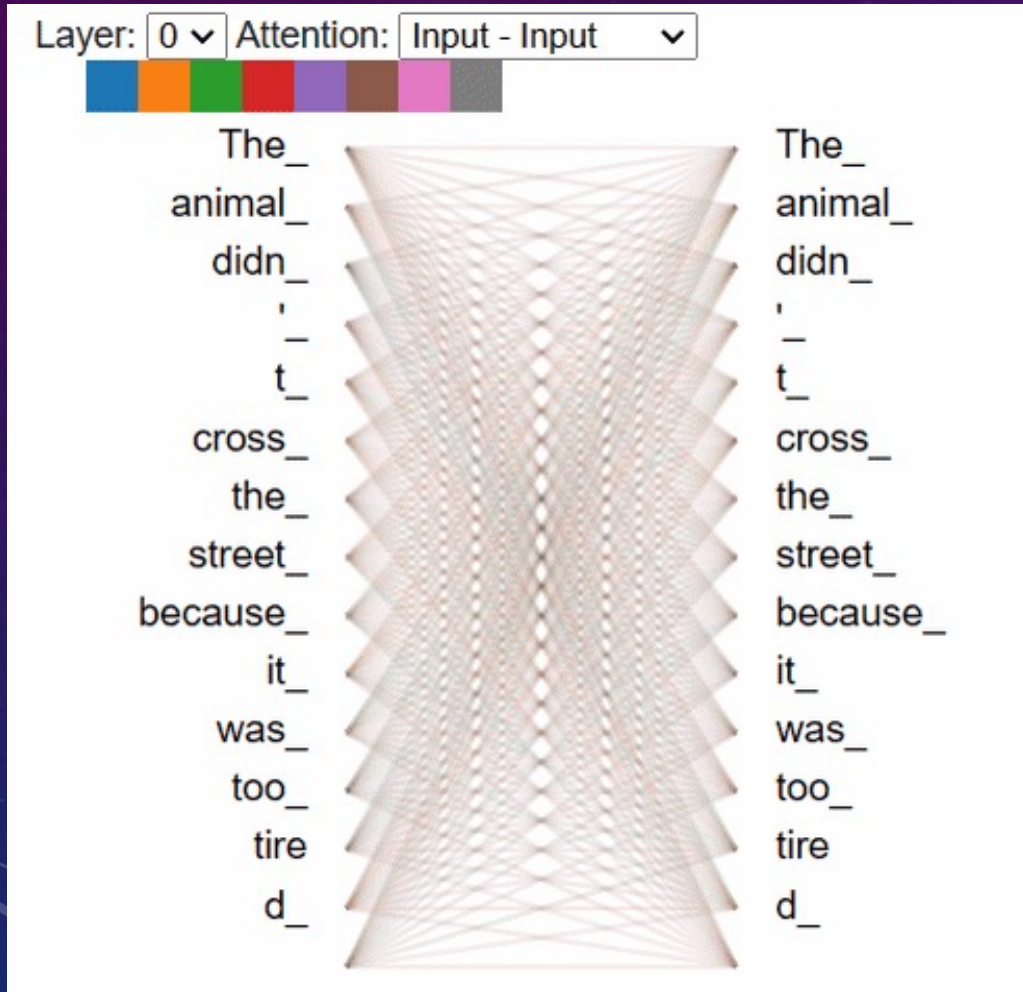


Pattern matching various pieces of information

HUMANS ARE GREAT AT PATTERN RECOGNITION



GPT = GENERATIVE PRE-TRAINED TRANSFORMER



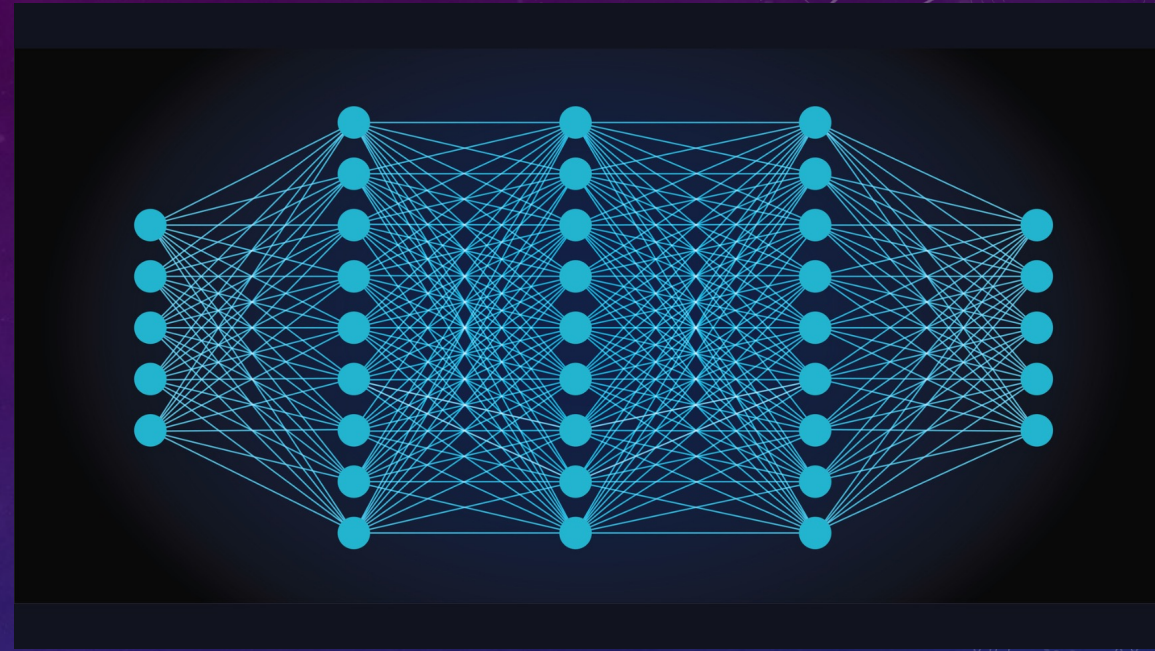
CHATGPT ANALYZES BILLIONS OF SENTENCES TO DETERMINE HOW THEY WORK **MATHEMATICALLY**

WHEN YOU WRITE AN INPUT, IT **MATHMETICALLY** FIGURES OUT WHAT IT MOST LIKELY REPRESENTS

IT WILL THEN DETERMINE A RESPONSE THAT **MATHEMATICALLY** REPRESNTS A LIKELY POSSIBILITY

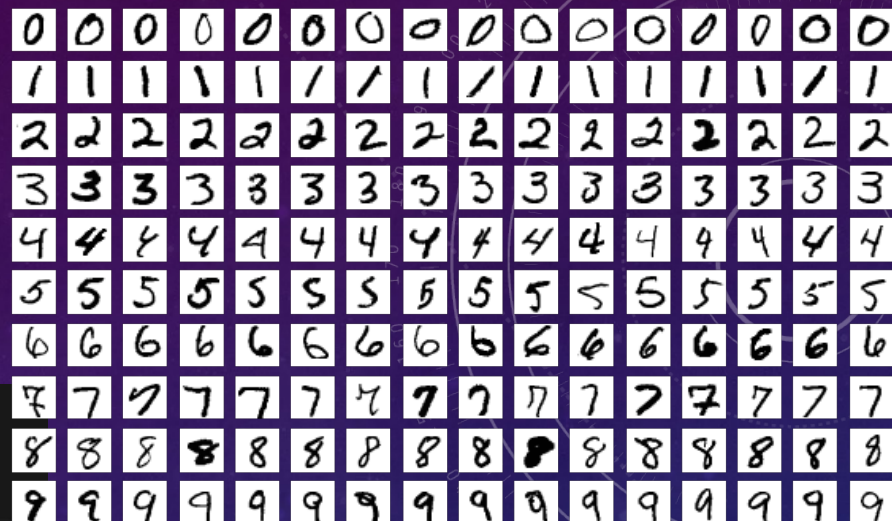
OPENAI AND CHATGPT

- 200 billion parameters
- 96 layers
- Largest Neural Network ever created
- Finds patterns in language
- ~1PB of data & 300,000 CPUs
- Uses more energy than Sweden



No one is 100% certain how exactly the network calculates results – it's just too complicated

LEARNING NUMBERS - EXAMPLE



Recognizing Characters: Results



OPENAI CHATGPT 4-0

Imagine a human could remember every text from every textbook, encyclopedia, Wikipedia, government regulations, government laws, legal cases, scientific journal, medical case study, medical trials, travel books, languages (spoken and programming), mathematical formulas, programming coding rules and examples, every picture of every animal,

And you could recall this information within a few seconds

USING CHATGPT

- Excellent for language inputs and responses
 - Questions in casual language
 - Responses in casual language
- Marketing, Customer Service, Help Desk, HR, Sales, Emails, Announcements
- You're request likely compares favorably to the 200 billion parameters in the dataset

WHEN DO I USE IT?

| ChatGPT | Google Search |
|--|--|
| Need to write an email or letter in a professional or humorous tone | Look up specific information |
| Create a unique image from a description or idea | Find info on a specific company or product |
| Brainstorm different solutions for a problem | View websites for competitors |
| Create a script, outline, or presentation template | Recent information on sports, weather, politics, stocks, |
| Create a unique and creative response to a fairly ambiguous statement | Trying to find specific examples for a specific problem |

- Marketing Copy
- Sales Copy
- Poetry
- Professional Email to Manager
- Solving a code problem in React
- Analyzing Data
- Summarizing Documents
- Work Instructions or Product Descriptions
- All demos done with ChatGPT 4-o

OTHER TOOLS AVAILABLE

- Google Gemini
- Anthropic (Claude)
- Llama (Meta/Facebook)
- Custom LLM – Anaconda Python

TO USE CHATGPT

- <https://chat.openai.com>
- Sign in/up for an account – Free to use
- Start typing questions

- Want more features, upgrade account to use better models and images (DALL-E) \$20/month
- Want to use programming API features, upgrade account to add API access \$20/~100,000 words

create an introduction paragraph for my website mcfallstech.com showcasing my background in Operations, Lean Manufacturing, and Software Development



Welcome to McFallsTech.com! With a rich background in Operations, Lean Manufacturing, and Software Development, I bring a unique blend of expertise to drive efficiency and innovation in your business. My journey began with a deep dive into operations management, where I honed my skills in streamlining processes and optimizing workflows. Leveraging Lean Manufacturing principles, I have successfully led initiatives that reduce waste and enhance productivity. Complementing these skills, my proficiency in software development enables me to implement cutting-edge solutions tailored to meet the evolving needs of modern industries. At McFallsTech, I am dedicated to transforming your operational challenges into opportunities for growth and success.

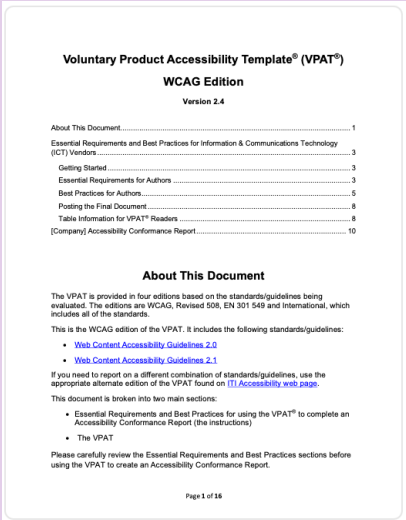
SALES

| Problem | Response |
|--|--|
| <p data-bbox="89 392 955 606">How would I write a tag line in an advertising commercial for this machine?</p>  | <p data-bbox="1044 392 2433 492">For an advertising commercial featuring the machine in the image, you can use the following tagline:</p> <p data-bbox="1044 564 2433 728">"Precision. Efficiency. Innovation. Transform Your Production with [Machine Name]."</p> <p data-bbox="1044 792 2446 1013">If you have a specific name for the machine, you can replace "[Machine Name]" with the actual name. This tagline highlights the key benefits of the machine: precise operation, efficient performance, and innovative technology.</p> <div data-bbox="1987 1113 2484 1256"></div> |

| Problem | Response | Regeneration |
|---|--|---|
| <p>Write a poem in 26 words with each word starting with a different letter of the alphabet in reverse about losing the love of your life</p> <p>POETRY</p> | <p>Zephyrs whisper, "You're gone," Xenon nights feel so long. Wounds in heart, deep and raw, Veins pulse with ache, no law. Under stars, tears fall, Quiet dreams now feel small. Pain echoes, deep in core, Once we danced, forevermore. Numbness seeps, I falter, Mourning by love's altar. Kisses lost, dreams gone, Just shadows linger on.</p> | <p>Zestful days now fade to gray, Yearning hearts in disarray. Xanadu dreams now lost in tears, Wishing you were still near. Vows broken, echoes remain, Undying love feels the pain. Time's cruel hand moves on, Sorrow lingers, joy is gone. Regretful whispers fill the air, Quiet moments hard to bear. Painful memories softly tread, Once bright love now is dead. Nevermore will we embrace, Melancholy takes your place. Lamentations haunt my soul, Kisses lost, hearts unwhole. Just a shadow where you stood, In my dreams, you still would. Hope extinguished, love undone, Gone forever, my dear one.</p> |

| Problem | Response |
|---|--|
| <p data-bbox="38 92 700 592">Write an email to my manager explaining that I would like a raise and that I deserve a promotion to a manager role. I've worked hard over the past 2 years, everyone respects me, my sections have outperformed other sections, our quality is way down, and productivity is way up.</p> <h2 data-bbox="63 678 662 742">CORPORATE EMAIL</h2> | <p data-bbox="751 92 1847 135">Subject: Request for Promotion and Raise Consideration</p> <p data-bbox="751 149 1235 192">Dear [Manager's Name],</p> <p data-bbox="751 207 2458 364">I hope this email finds you well. I am writing to formally request a promotion to a managerial role and a corresponding raise, based on my performance and contributions over the past two years.</p> <p data-bbox="751 378 2484 649">During my time with the company, I have consistently demonstrated my commitment to excellence and growth. My sections have consistently outperformed others, reflected in our significantly increased productivity and reduced quality issues. These achievements have been made possible through diligent effort, strategic planning, and fostering a collaborative environment where everyone's contributions are valued and respected.</p> <p data-bbox="751 664 2497 935">I am proud of the respect and rapport I have built with my colleagues, which has been instrumental in driving our collective success. My ability to lead, motivate, and manage has been evident in the results we've achieved together. Given the positive impact on our operations, I believe that I am ready to take on greater responsibilities in a managerial capacity.</p> <p data-bbox="751 949 2484 1106">I am confident that my promotion will not only recognize my hard work and dedication but also contribute to our continued success. I look forward to discussing this further and exploring how I can continue to add value to our team in a managerial role.</p> <p data-bbox="751 1120 1592 1163">Thank you for your time and consideration.</p> <p data-bbox="751 1178 1006 1278">Best regards, [Your Name]</p> |

SUMMARIZE DOCUMENT

| Problem | Response |
|---|--|
| <p data-bbox="81 572 894 615">Summarize this document in 3 sentences.</p> <div data-bbox="366 625 769 1139"><p>The screenshot shows the cover page of the 'Voluntary Product Accessibility Template (VPAT) WCAG Edition, Version 2.4'. It includes a table of contents with sections like 'About This Document', 'Essential Requirements and Best Practices for Information & Communications Technology (ICT) Vendors', 'Getting Started', 'Essential Requirements for Authors', 'Best Practices for Authors', 'Posting the Final Document', 'Table Information for VPAT[®] Readers', and '(Company) Accessibility Conformance Report'. Below the table of contents, there is an 'About This Document' section that explains the VPAT's purpose, its editions (WCAG, Revised 508, EN 301 549, and International), and the standards/guidelines it includes (WCAG 2.0 and 2.1). It also provides instructions on how to use the VPAT to create an Accessibility Conformance Report.</p></div> | <p data-bbox="1049 572 2458 1072">The document is a Voluntary Product Accessibility Template (VPAT) for Swank Motion Pictures' Swank Streaming Cloud v5.8, detailing its conformance with Web Content Accessibility Guidelines (WCAG) 2.0 and 2.1. It outlines the essential requirements and best practices for authors and ICT vendors in creating an Accessibility Conformance Report using the VPAT template. The report assesses the product's accessibility features and provides a detailed account of its compliance with various WCAG success criteria, including support levels, remarks, and explanations for each criterion.</p> |

SOLVING A CODE PROBLEM IN REACT

| Problem | Response |
|---|---|
| How do I write code in React JS to get a RESTful API call using a 3 rd party API for SugarCRM to get Quote information by record | <p>To make a RESTful API call to a 3rd party API for SugarCRM to get quote information by record in a React JS application, you will need to:</p> <ul style="list-style-type: none">Set up your React environment.Use the axios library (or fetch API) to make HTTP requests.Handle authentication (if required by the API).Manage the state to store and display the fetched data. <p>Below is an example using axios:</p> <p>Set up your React environment: Ensure you have a React environment. You can set up a new project using Create React App:</p> |

```
bash

npx create-react-app my-app
cd my-app
npm install axios
```

```
jsx Copy code

// src/components/QuoteInfo.js
import React, { useState, useEffect } from 'react';
import axios from 'axios';

const QuoteInfo = ({ quoteId }) => {
  const [quote, setQuote] = useState(null);
  const [loading, setLoading] = useState(true);
  const [error, setError] = useState(null);

  useEffect(() => {
    const fetchQuote = async () => {
      try {
        const response = await axios.get('https://your-sugarcrm-api-url.com/v10/quotes/' + quoteId, {
          headers: {
            'Content-Type': 'application/json',
            'Authorization': 'Bearer your-access-token' // replace with your access token
          }
        });
        setQuote(response.data);
      } catch (err) {
        setError(err);
      } finally {
        setLoading(false);
      }
    };

    fetchQuote();
  }, [quoteId]);

  if (loading) return <p>Loading...</p>;
  if (error) return <p>Error: {error.message}</p>;

  return (
    <div>
      <h2>Quote Information</h2>
      <p>ID: {quote.id}</p>
      <p>Name: {quote.name}</p>
    </div>
  );
};
```

Problem

Response

What are the best opportunities to grow revenue over the next 3 months?

To identify the best opportunities to grow revenue over the next three months, let's analyze the data and look for trends that can be leveraged. Here are some key insights and strategies based on the data provided:

- Focus on High-Performing Days and Weeks:**
 - Identify the days and weeks where the net revenue was significantly higher.
 - Replicate the strategies used during those periods.
 - For example, look at the dates where the net revenue spiked and analyze the activities or promotions that were in place.
- Optimize Underperforming Sections:**
 - Analyze the sections that consistently underperform and identify the bottlenecks.
 - Implement targeted improvements, such as staff training or process optimization, to bring these sections up to par.

- Increase High-Demand Product Availability:**
 - Identify the products or services that have higher demand and ensure they are always in stock.
 - Implement a dynamic pricing strategy to maximize revenue from high-demand products.
- Enhance Customer Experience:**
 - Focus on improving the customer experience to increase repeat business and customer loyalty.
 - Implement feedback loops to continuously improve based on customer input.
- Marketing and Promotions:**
 - Use targeted marketing campaigns to promote high-margin products.
 - Offer limited-time promotions and discounts to boost short-term sales.
- Leverage Data Analytics:**
 - Use data analytics to predict trends and adjust strategies accordingly.
 - Identify patterns in customer behavior and tailor marketing efforts to meet their needs.

| ID | Name | Date | Revenue |
|----|-----------|------------|---------|
| 1 | Product A | 2024-01-01 | 1000 |
| 2 | Product B | 2024-01-02 | 1500 |
| 3 | Product C | 2024-01-03 | 2000 |
| 4 | Product D | 2024-01-04 | 1200 |
| 5 | Product E | 2024-01-05 | 1800 |

LIMITATIONS – WHAT IS CHATGPT NOT GOOD AT?

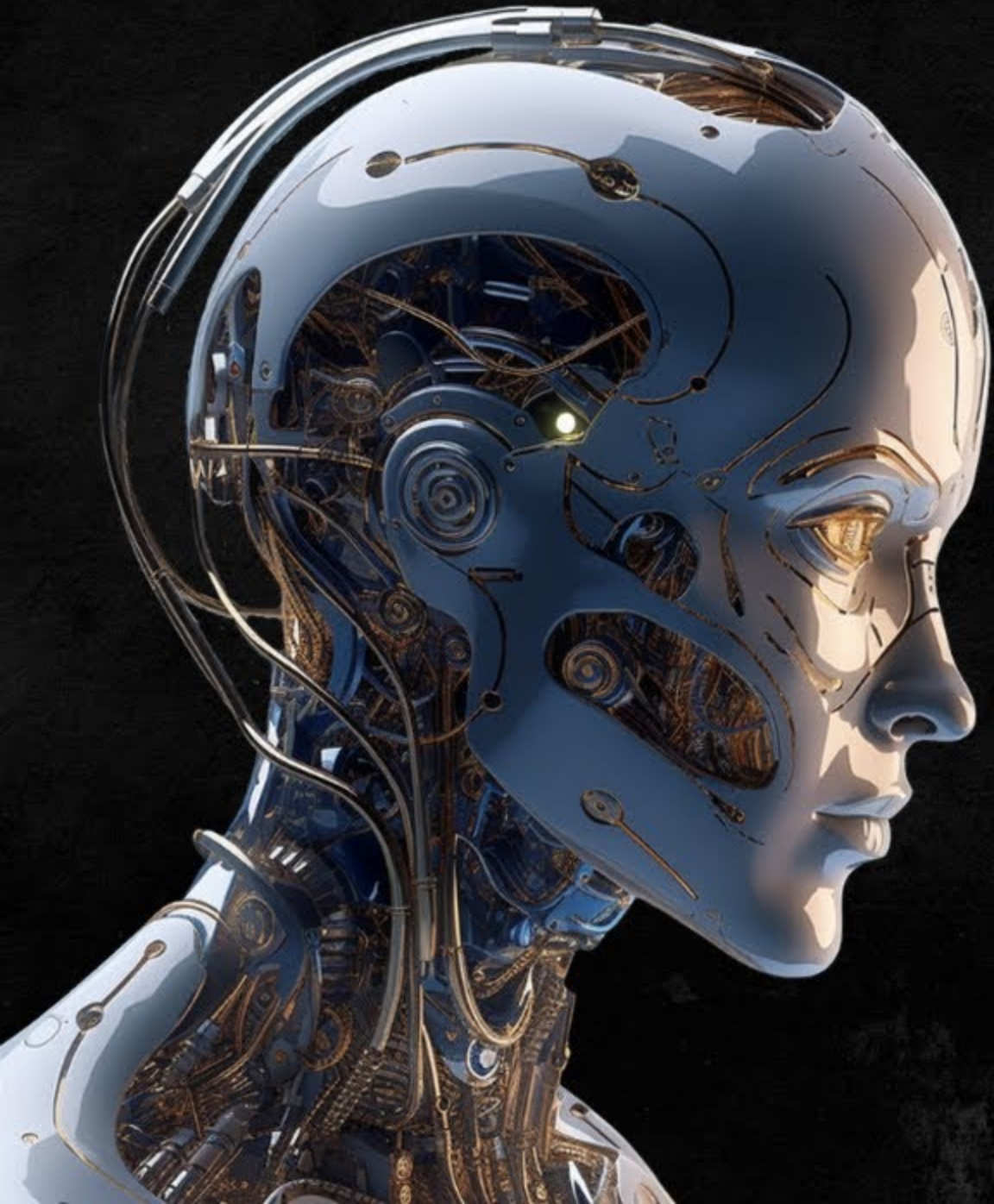
- Image generation with words or text
- Poorly worded, confusing, or controversial questions
- Analysis on unclear, inaccurate, or incomplete information
- No recent information
- **Hallucinations: incorrect results representing the highest probability of an answer or response**

WONDERFUL, BUT SCARY

- Great for
 - Brainstorming, emails, announcements, social media posts, website updates, create content
 - Creatives looking to get more done and be more productive
- Beware of
 - Manipulating information to prove a jaded point of view
 - Misinterpreting inaccurate results
 - Managers looking to manipulate information, so it looks good to the boss

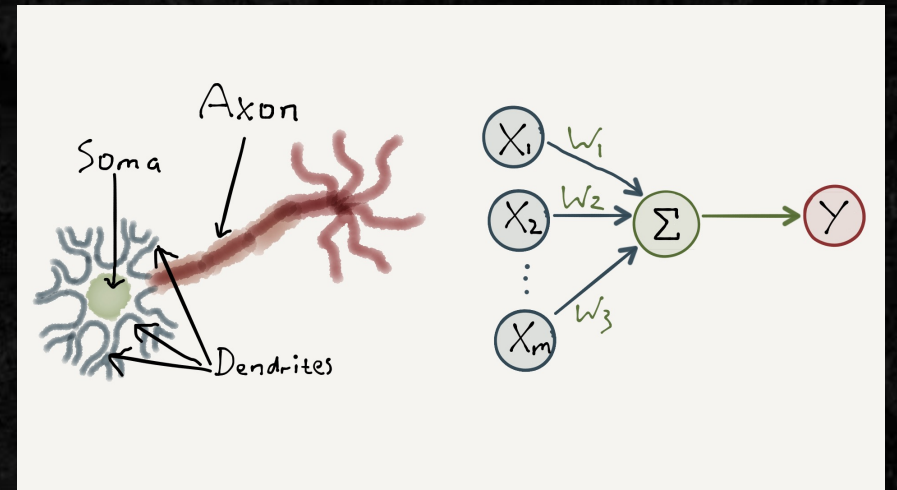
USING GENERATIVE AI IN YOUR BUSINESS

1. Do not plan on using AI to eliminating jobs
2. Select a use case with a clear problem statement
3. Use a data set with a strong foundation
4. Keep the data set updated and relevant
(and cost effective)
5. Never stop learning new skills and techniques



 OpenAI

 GPT-5



THANK YOU



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