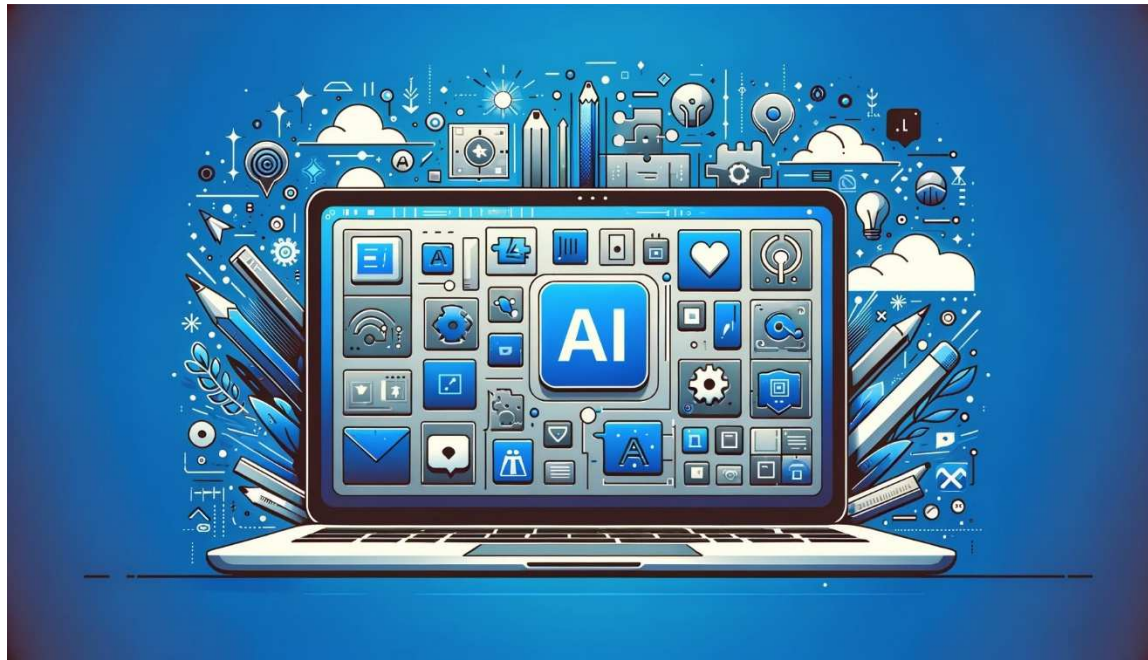# AI Tools For Engineers: What, How, Where, and When?

Agenda For Tonight's Presentation

- Background on how we got to where we are

- Optimizing ChatGPT

- Prompts

- Other Things You Can Do With ChatGPT

- One More Thing

The New Reality: AI Has Arrived

- GPT-1 was introduced in June 2018

- GPT-2, which was released in February 2019, represented a significant upgrade with 1.5 billion parameters. It showcased a dramatic improvement in text generation capabilities and produced coherent, multi-paragraph text.

- GPT-3 was a huge leap forward in June 2020. This model was trained on a staggering 175 billion parameters. Its advanced text-generation capabilities led to widespread use in various applications, from drafting emails and writing articles to creating poetry and even generating programming code. It also demonstrated an ability to answer factual questions and translate between languages.

- GPT-4, the latest iteration, continues this trend of exponential improvement.

What Is AI Good At Doing?
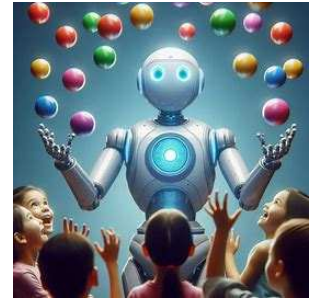
- **Customer service**: Companies are leveraging ChatGPT to automate responses to common inquiries.

- **Education**: ChatGPT is being used to create intelligent tutoring systems capable of providing personalized assistance to students.

- **Content creation**: Journalists, copywriters, and content creators are using ChatGPT to generate creative ideas, draft articles, and even write poetry.

- **Businesses**: All kinds of professionals are using the chatbot to automate tasks like drafting emails or writing code.

- **Healthcare**: Providers and staff can leverage the chatbot for use cases like clinical decision support, medical recordkeeping, analyzing and interpreting medical literature, and disease surveillance.

- **Entertainment**: ChatGPT can be used to generate video game storylines and movie scripts, write dialogue, and improve gaming.

How Do LLM AIs Work?

- When you enter a prompt into generative AI, the words that you input are converted into a numeric format referred to as tokens.

- For example, suppose the sentence was "The dog barked" and that we had beforehand assigned the number 23 to the word "The", 51 to the word "dog" and 18 to "barked".

- The tokenized version of the sentence "The dog barked" would be those numbers shown in the sequence of 23, 51, and 18.
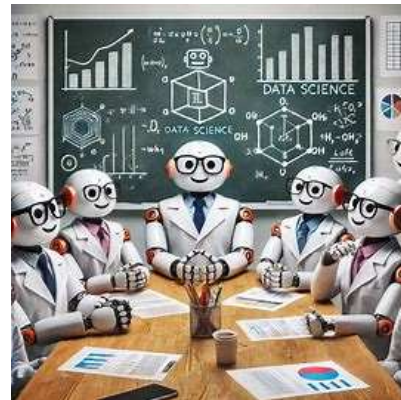
How Do LLM AIs Work?

- Next, after that conversion from text to numbers, the numbers or tokens are then used within the generative AI to figure out what the output will be.

- A long series of computations are undertaken.

- At the tail end of the processing, and before you see any text output, the resultant numbers might consist of say 10, 48, 6, which let's assume that 10 is for the word "Yes", 48 is for the word "it" and 6 is for the word "did".

- Thus, the output as a result of making use of the inputs 23, 51, and 18, gives us the numbers 10, 48, and 6, which is shown to you as "Yes it did".
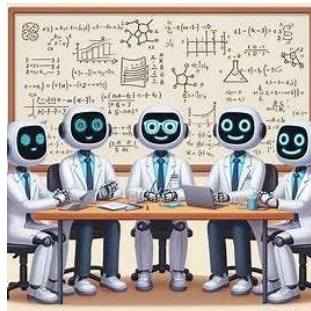
# Which AI Should You Use?
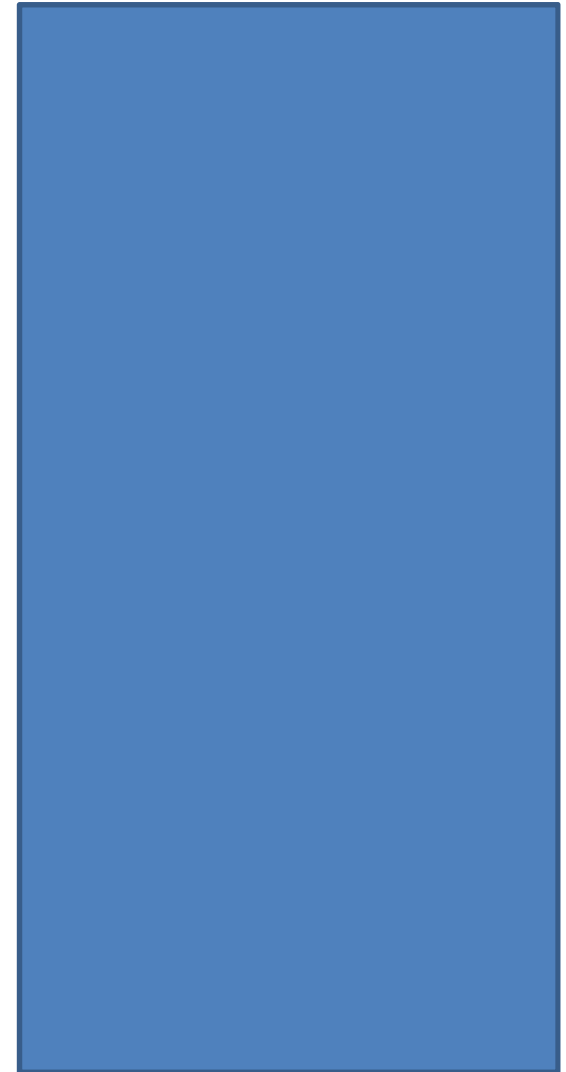
Optimizing ChatGPT

Save / Rename Your Conversations

- Your conversations with ChatGPT get saved.

- Each chat begins a new context window with ChatGPT; that is, the amount of information it can store in its memory before it forgets the start of the conversation.

- So, to get the most out of the conversation you should try to use each one for a specific task or purpose, starting a new thread if you want to discuss or work on a different project.

- You can rename a chat by **clicking the three dots** that appear next to the name in the sidebar and **then rename**.

- Here you can archive (remove it from the list but keep stored) or delete it.
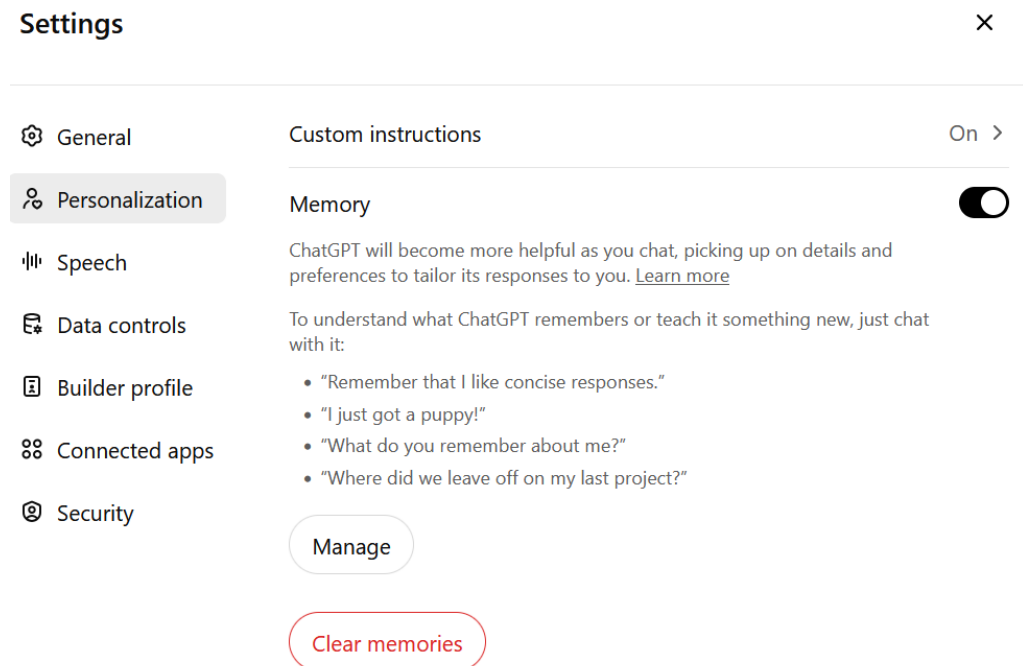
You Can Customize ChatGPT

- ChatGPT has had custom instructions for some time now.

- These are pieces of information that are available to ChatGPT across every chat and help it direct the responses to your interests and background.

- This section is split into two questions: What would you like ChatGPT to know about you to provide better responses? and How would you like ChatGPT to respond?

- The former is the place to give details such as your line of work, hobbies or family, the latter is for specific instructions such as 'always give full code blocks' or 'talk to me like I'm 5'.
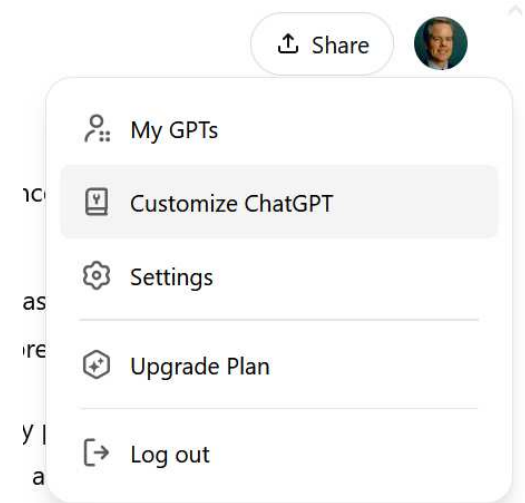
Memory

- Memory allows users to avoid repeating themselves every time they use the chatbot and undergo a more tailored experience.

- With Memory, the chatbot remembers any user-supplied insights that could prove useful when formulating subsequent answers.
"What food should I feed my pet?"

Temporary Chat

- Worried that ChatGPT will remember what you ask it and perhaps use it to train future versions of the AI tool?

- Use "Temporary Chat" to have your chats not used to train future models and not be retained in history.
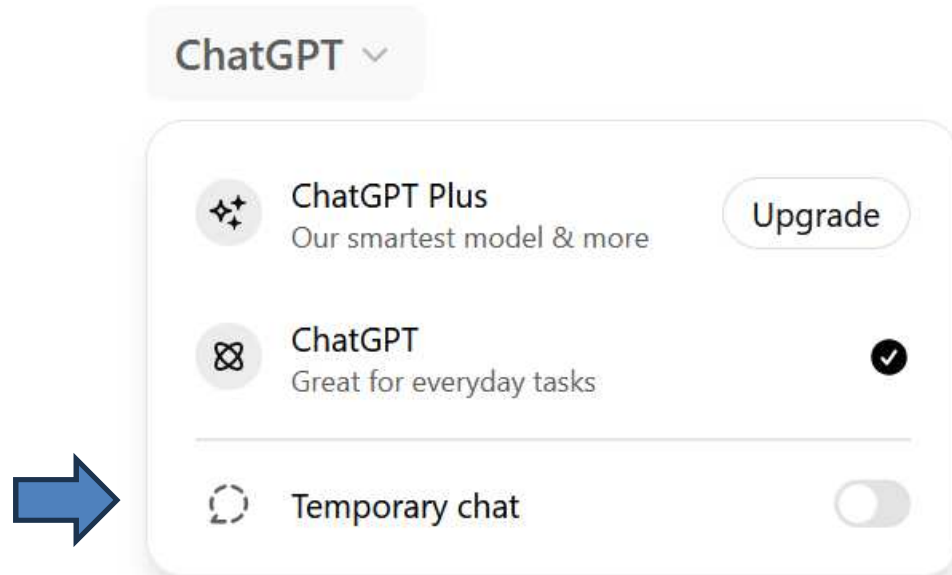
Pick A Theme

- So what do you like: dark or light?

Custom GPTs
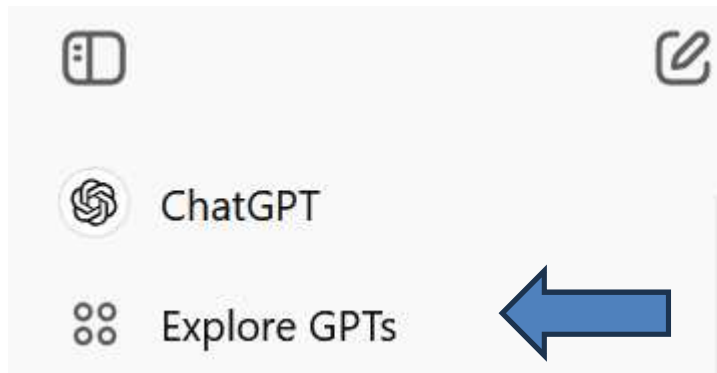
ChatGPT Advanced Voice Mode

- ChatGPT's [Advanced Voice Mode](#) (AVM) leverages OpenAI's latest large language model, GPT-4o, to facilitate more natural, back-and-forth conversations with you, the user.

- This makes it ideal for tasks that require real-time interaction, such as brainstorming or discussing complex topics.

- Free users receive a monthly preview (15 minutes) of AVM, allowing them to experience its features for a limited time each month.

ChatGPT Prompts

Brainstorming Creative Ideas

- Prompt: "I need help brainstorming ideas for [a topic, product, or project]. Can you provide 10 unique ideas or approaches, and briefly explain each?"

- Its like having a brainstorming partner who never runs out of ideas.

- ChatGPT will come through with ideas to help.

- The best part? No ads.

- Plus, ChatGPT's suggestions include angles that you many not have even considered, sparking new creative ideas that hadn't previously occurred to you.

Learning Complex Topics

- Prompt: ""*Explain [topic] to me as if I were [a beginner, a college student, or an expert]. Provide examples or analogies to help me understand better.*"

- Breaking down complex topics is another area where ChatGPT shines.

- You can tailor the prompts including words such as beginner, college student, or professional, to yield responses according to your specific needs.

- Regardless of the learning level you choose, you can expect clear and engaging responses.

- The ability to customize the difficulty of the explanation makes ChatGPT an excellent learning tool for people of all levels, from curious beginners to individuals looking for a refresher.

Optimizing Productivity and Workflows

- Prompt: *"Help me optimize my workflow for [a specific task or project]. Suggest tools, strategies, or AI-assisted solutions that can save time or improve quality."*

- To streamline your productivity, try using ChatGPT as your efficiency coach.

- ChatGPT offers suggestions that you may not have thought of, while covering all angles of possibilities.

- A prompt like this is especially useful because it breaks down what feels like a large, overwhelming task into checklists.

Writing Assistance

- Prompt: *"I need help writing [type of content, e.g., a blog post, a persuasive email, or a professional bio]. Here's the topic/goal: [describe it]. Can you create an outline or a first draft for me?"*

- ChatGPT is a game-changer when it comes to writing.

- You can also ask ChatGPT for a particular word count. This is especially helpful if you're looking to produce content for a website, social media platform, or to fit within a specific space on something like a brochure.

- If you use ChatGPT for content creation for an email, for example, it will even suggest ways to make your message more engaging, such as adding a personalized opening line and a clear call to action.

Personalized Recommendations

- Prompt: *"Based on my [situation, preferences, or needs], can you recommend [books, movies, strategies, tools, etc.] and explain why they might be a good fit?"*

- Sometimes, ChatGPT feels like a true personal assistant.

- The recommendations are almost always tailored to your needs and often include extra, helpful information.

Problem-solving and Decision Making

- Prompt: *"I'm facing [specific challenge or decision]. Can you provide a step-by-step plan to address this issue, including potential risks and how to mitigate them?*

- One of the reasons you may go to ChatGPT to help with decision making, is that it helps you think logically while taking out some of the emotion that might cloud your thinking.

- The chatbot is not perfect, and definitely may leave out a lot to consider with a big decision.

- It can get the ball rolling with ideas, making this prompt helpful for a variety of reasons.

- The chatbot breaks down complex problems into manageable steps, adding new perspective and solutions that are useable and easy to understand.

For Learning New Skills

- Prompt: *"I want to learn [specific skill or topic]. Can you create a 30-day learning plan with daily activities or tasks to help me master the basics?"*

- ChatGPT can provide a roadmap tailored to fit your personal goals.

- This prompt is one recommended to users to try when they want a structured plan to help them stay on track.

- The chatbot gives you an overview, which can be helpful to see the "big picture."

- And for those who actually do get started, tackling a new skill incrementally is a good way to stay motivated.
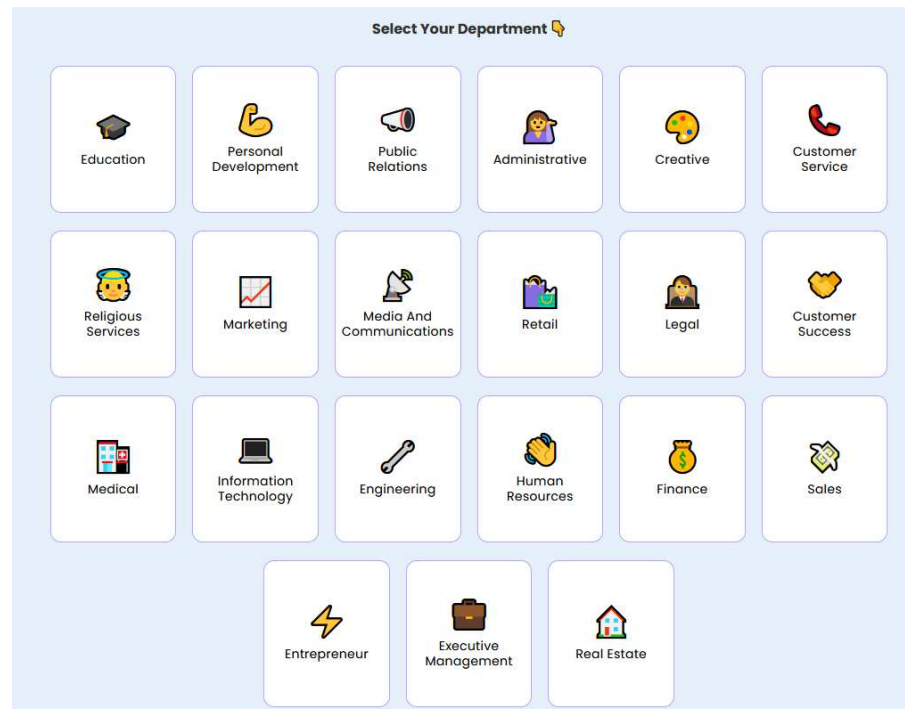
Other Things You Can Do With ChatGPT

The Key To A Successful
AI Interaction

- Creating good prompts is the key to having a good interaction with an AI tool: the better the prompt, the better the response.

- You can spend a lot of time becoming good at creating good prompts.

- Or, you can go to https://www.aiforwork.co/

Navigate Language

- When translating from one language into another, it can be tough to capture what the person really meant.

- What we would like to be able to do is to translate using Colloquial language, slang, uncommon definitions, local phrases.

Detect language English **Spanish** French ⌄   ⇄   **English**

ojo   ✕   eye
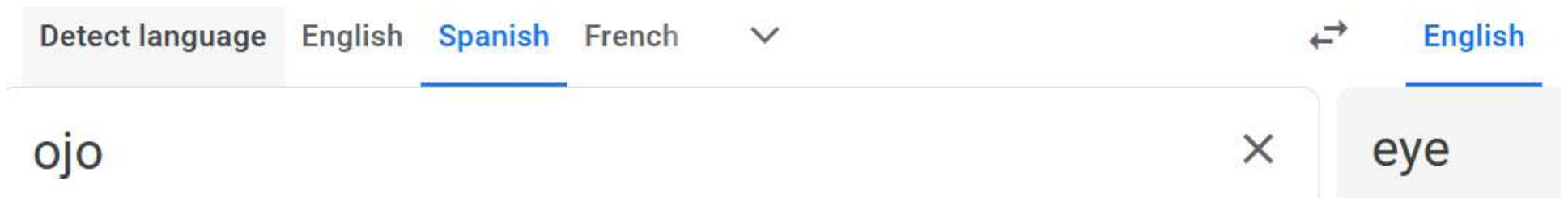
Sider Chrome Extension

- ChatGPT Sidebar: Enhance workflow with ChatGPT, GPT-4o, Claude3.5, Gemini 1.5 Pro.

- With the Sider AI Chrome extension, you can effortlessly integrate ChatGPT and other copilot AI functionalities right into your daily tasks—be it searching the web, emailing, improving writing or translating text.
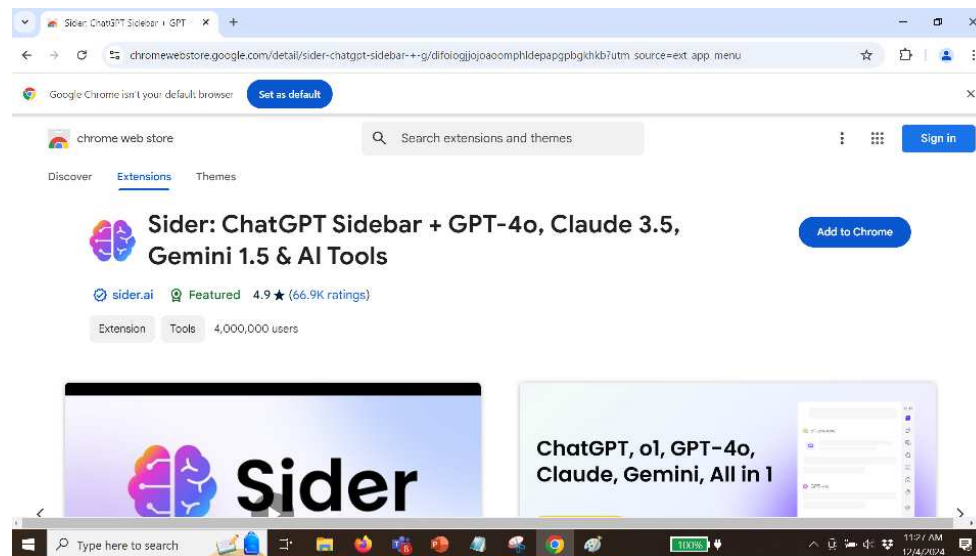
Summarize Meeting Minutes

- When you are faced with trying to find out what happened during a long meeting that had minutes created for it, you can use AI tools to summarize the material.

- Even better, you have it locate and call out any actions that were created

Write Content Like Someone Else

- Ever fire off an angry email and then regret it later?

- Try to put together an email to convince your boss to do something?

- If you run text through ChatGPT it can rewrite your text in a way that may help you to accomplish what you are trying to do.

Summarize Videos

- Found a YouTube video that is really, really long?

- Ask ChatGPT to summarize it.

- Make sure that you include both the link and the title

Teach Me

- If you want to learn something new, you have options: Google, ChatGPT

- If you go to ChatGPT it can provide a lot of detailed information.

- You can also ask for more information or for it to clarify something that you didn't understand.

Physical Health

- If you have weight / strength goals, ChatGPT can help.

- It can tell you what you should / should not be eating.

- It can create balanced meals for you.

- It can track your calories.

- It can create a shopping list.

- Create a recipe based on the food items that you have at home.

Games

- Trivia games

- Create an HTML Pong game

- D&D adventure games

One More Thing…

One More Thing…

- Perplexity AI is designed as an AI-powered search engine that provides accurate, source-backed answers, making it ideal for research.

- In contrast, ChatGPT is a versatile chatbot that excels in generating creative text and engaging in conversations but may not always provide the most up-to-date information.

- Instead of just being another chatbot, Perplexity AI is billed as an alternative to traditional search engines.

- It's designed to find and summarize content from the web.

- It neatly summarizes information and references each individual point.