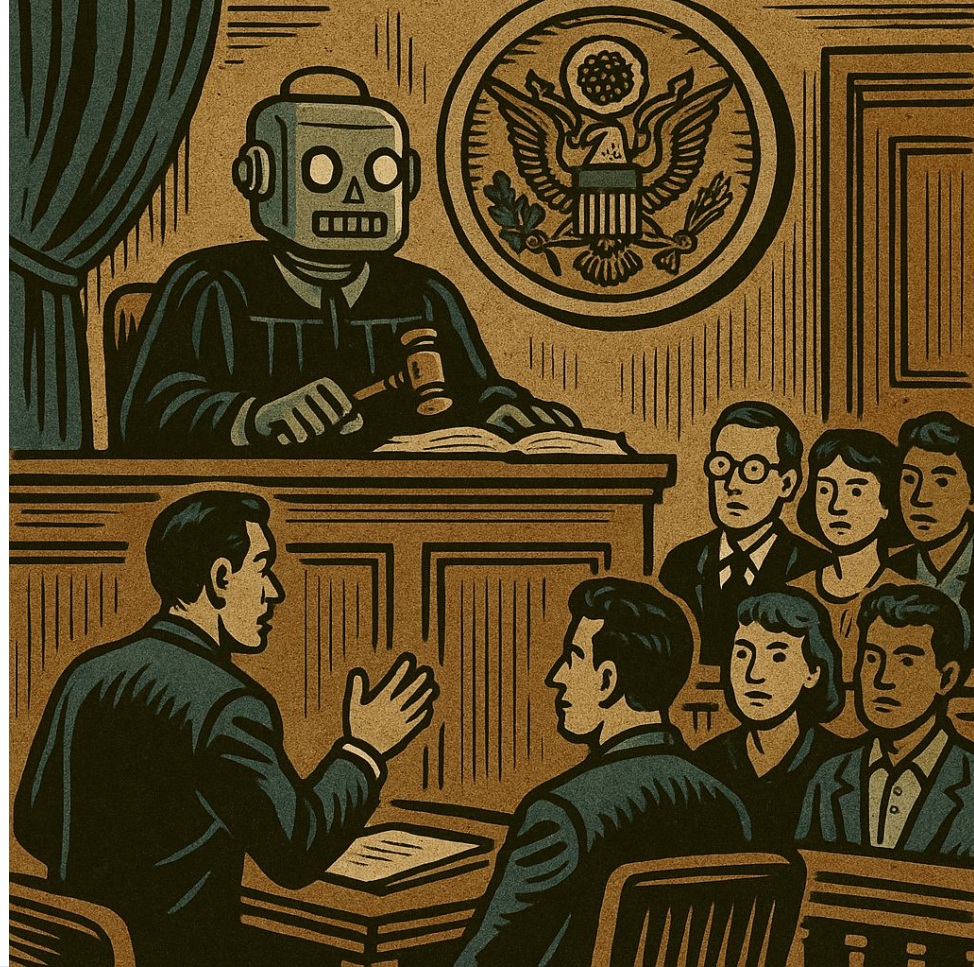


Gen AI: A Practical Overview



Chris Porter



- Associate professor of computer science at Drake University and director of Drake's Artificial Intelligence program
- Teach classes in computer science, data analytics, artificial intelligence, and digital ethics.

Chris Snider



- Professor of multimedia in Drake University's School of Journalism and Mass Communication
- Teach classes on video, audio, social media, design, storytelling and web design to undergrad and graduate students

Innovation Profs LLC

- Help people understand generative AI tools through workshops and custom training
- Assist with implementing generative AI at your company or organization
- Offer a twice-weekly newsletter to keep you up-to-date on generative AI news and tools. **Sign up at innovationprofs.com**



The plan for today

- The landscape of gen AI tools
- Putting gen AI tools to work
- Legal and ethical issues
- Where generative AI is heading

Get today's slides

- **bit.ly/more-gen-ai**
- Slides from today
- Gen AI Newsletter
- Learn about future events



The Landscape of Gen AI Tools



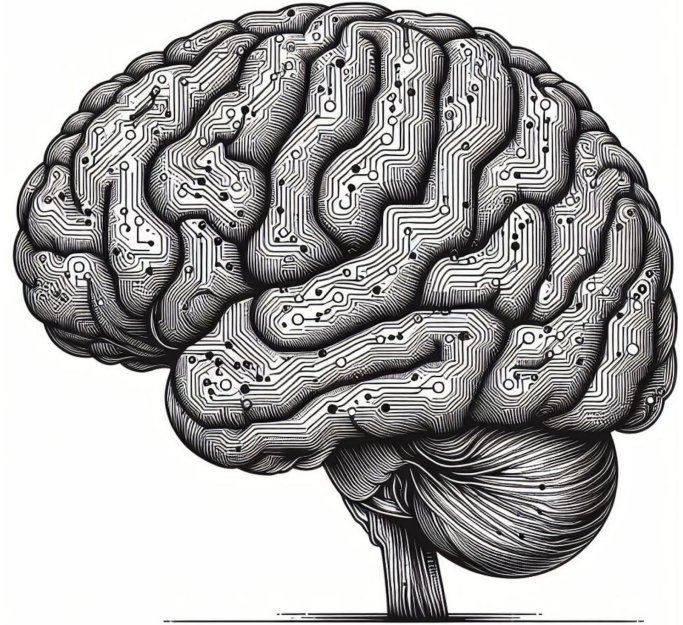
What is generative AI?

- Generative AI is a branch of artificial intelligence that uses generative models (systems trained on vast datasets) to create brand-new content such as text, images, video, audio, or code, rather than simply classifying or retrieving existing data.
- The model learns patterns in its training data and then produces original outputs when given an input prompt (e.g., “Write a game recap” or “Design a poster”).



Large language models

- Large language models (LLMs) are machine learning models that have been trained using massive amounts of textual data.



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Large language models

- The key breakthrough in the development of LLMs is the ability of models to provide on-topic, human-like text in response to the prompts they receive.

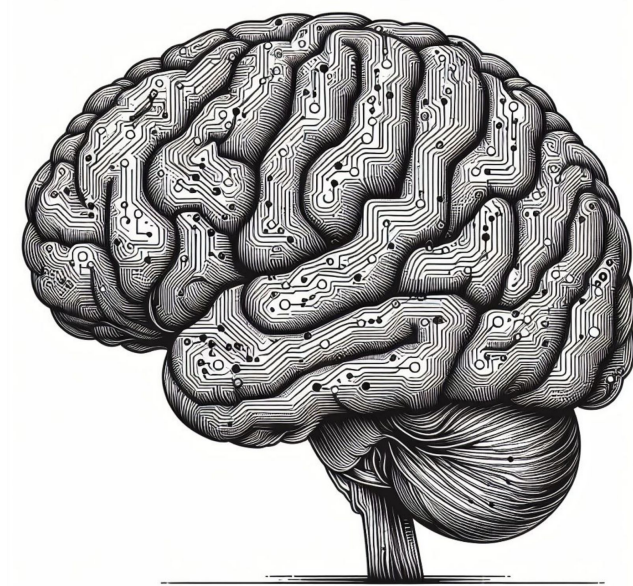
Large language models

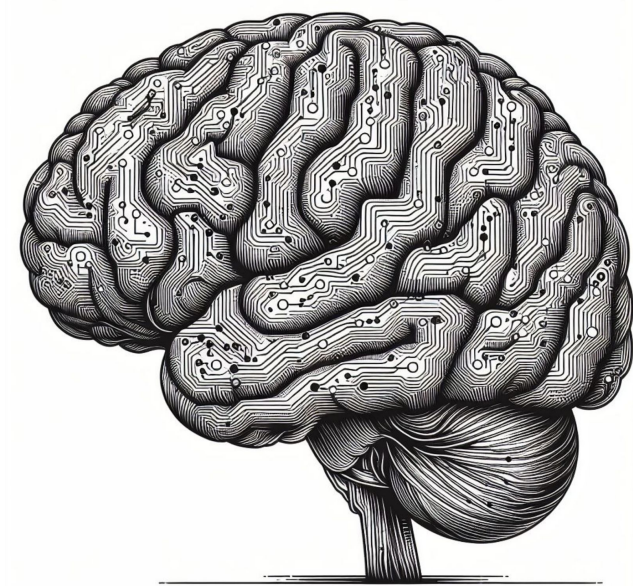
- The key breakthrough in the development of LLMs is the ability of models to provide on-topic, human-like text in response to the prompts they receive.

GPT-2 example
in response to a
prompt about
North Korea:

Life is a place full of surprises! Melt a glorious
Easter cake in French but not that green. Well,
a green cake, but for a Tuesday, of course! All
Easter party year and here is the reason for baka.





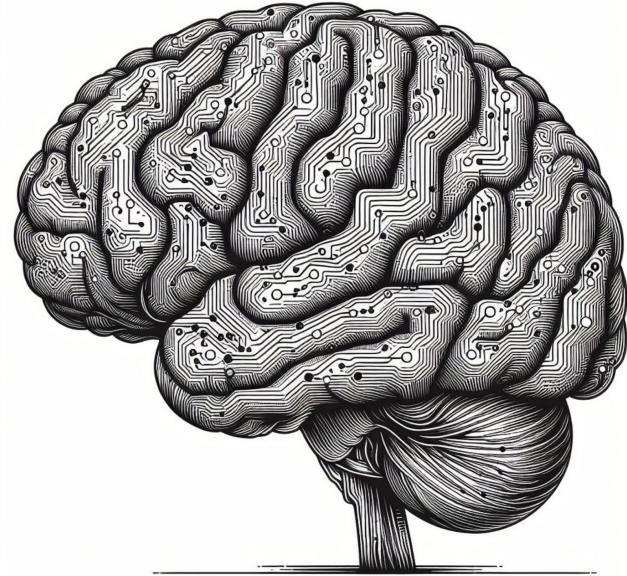


Complete this sentence:
"A duck walks into a..."





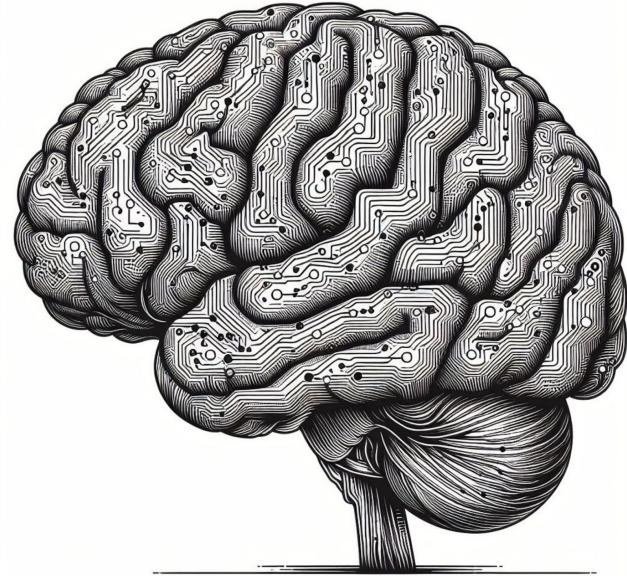
Complete this sentence:
"A duck walks into a..."



A duck walks into a {
bar (93%)
pond (4%)
bucket (2%)
typhoon (1%)



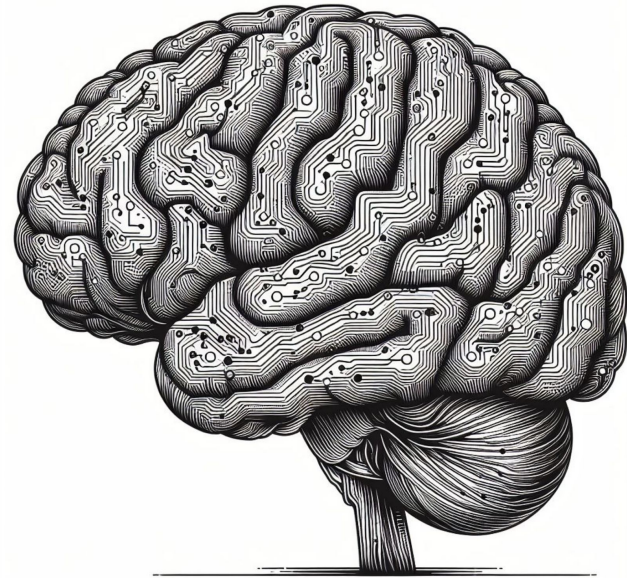
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"A duck walks into a..."



A duck walks into a {
bar (93%)
pond (4%)
bucket (2%)
typhoon (1%)



Complete this sentence:
"A duck walks into a..."



A duck walks into a bar.

Major LLM players

- The main players in the LLM space are:
 - ChatGPT - OpenAI
 - Copilot - Microsoft
 - Gemini - Google
 - Claude - Anthropic
 - Llama - Meta



Minor/emerging tools

- Perplexity (uses open source models; recently launched a browser)
- Grok - xAI
- R1, V3 - DeepSeek (Chinese open source models that disrupted the market in January 2025)



Which should you use?

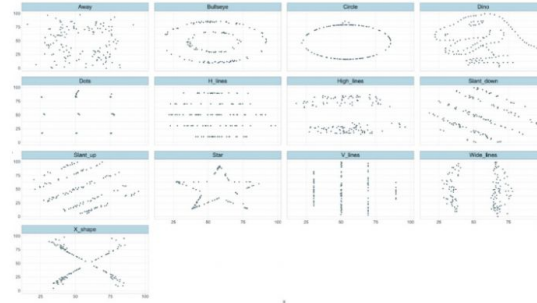
- ChatGPT is the leader in this space (60% market share), but the LLM leaderboard includes models of Claude, Gemini and Grok.
- It's a good idea to test a couple regularly but OK to settle on one (and get the paid version).
- Let's look at some more advanced features of LLMs.

Reasoning models

- Reasoning models are LLMs that spend more time “thinking” (i.e. computing more) before producing their answers and can provide the set of steps taken to arrive at their output.
- The best use cases for reasoning models involve mathematical reasoning or coding-based tasks.
- Reasoning models also underlie deep research tools that are becoming increasingly widespread.
- ChatGPT, Google Gemini, Microsoft Copilot, and Claude all offer reasoning models.



Reasoning models in action



What do these images teach us about summary statistics?

Thought for 1m 7s ▾

- The user shared an image of the Datasaurus Dozen, a set of scatterplots with identical summary statistics but drastically different shapes. These illustrations reinforce a valuable lesson: relying solely on summary statistics—like mean, variance, or correlation—can be misleading. Just like Anscombe's quartet, the message is clear: always visualize your data to understand its true distribution. It's a reminder that statistics alone can miss underlying patterns, so visualizing data is essential for accurate insights.

Deep research

- Deep research tools can carry out research on the internet for users.
- “Today we’re launching deep research in ChatGPT, a new agentic capability that conducts multi-step research on the internet for complex tasks. It accomplishes in tens of minutes what would take a human many hours.”



What can I help with?

Ask anything



Search



10 available until April 6

Get detailed insights on any topic



Deep research example

"How can I increase the reach of my biweekly newsletter on generative AI?"

Could you share more about your current strategy and goals for the newsletter? For example:

1. Who is your target audience (e.g., developers, business leaders, creatives)?
2. What channels are you currently using to distribute the newsletter?
3. Do you have a website or social media presence that supports it?
4. Are you focusing on organic growth, paid promotion, or both?
5. Do you use any analytics to track engagement?

This will help me tailor the recommendations to your context.



Target audience: digital media professionals, educators, tech professionals, business leaders. Using Beehiiv to distribute newsletter, promoting it on LinkedIn, want to increase organic reach, we do have a website, and we are open to guest contributions.

For previous editions, check innovationpros.beehiiv.com

Thanks for the details. I'll explore effective strategies to increase the organic reach of your biweekly newsletter on generative AI, tailored to your audience of digital media professionals, educators, tech professionals, and business leaders. I'll focus on optimizing your use of Beehiiv, leveraging LinkedIn and your website, and incorporating guest contributions.

I'll get back to you with actionable recommendations shortly.

Research completed in 6m · 28 sources · 68 search



Strategies for Growing a Generative AI Newsletter Organically

Overview: This report outlines actionable strategies to boost the organic reach of a biweekly *Generative AI* newsletter targeting digital media professionals, educators, tech workers, and business leaders. The focus is on leveraging **Beehiiv** platform features, **LinkedIn** promotion, website optimization (SEO and lead magnets), and **guest contributors** – **without** relying on paid ads. Each section provides best practices and examples from successful newsletters, structured for clarity.

1. Organic Growth Tactics on Beehiiv

- **Leverage Referral Programs and "Viral Loops":** One of the most powerful growth engines for newsletters is a referral incentive program. Beehiiv offers a built-in referral system that makes it easy to reward subscribers for spreading the word ¹. Set up milestone-based rewards (e.g. exclusive content, swag, or access to a community) to motivate readers to refer colleagues and friends ². Successful examples include *The Milk Road* (a crypto newsletter) which attributes a large portion of its rapid growth to Beehiiv's referral program ⁴, and *Morning Brew*, which grew about one-third of its reader base through a well-designed referral scheme ⁵. Referred subscribers often become highly engaged readers since they come via personal recommendation ⁶. To implement this, define a few attainable referral tiers (for example: 3 referrals = bonus content, 10 referrals = branded merch) and promote the program in every issue's footer. This creates a **"viral loop"** where each new subscriber can bring in others ⁷ ⁸, fueling organic growth without paid marketing.
- **Cross-Promote with Complementary Newsletters:** Partnering with other newsletters is an effective way to tap into new audiences organically. Beehiiv's platform even has a *Recommendations* or *networking* feature to find suitable partners ⁹. Look for newsletters in related niches or industries (with similar audience interests, but not direct competitors) and agree to shout each other out. For example, *World Builders* (AI in storytelling) and *Young Money* (fintech for young professionals) did a cross-promotion that benefited both publications ¹⁰. The key is to offer balanced value – you might feature their newsletter in a "Recommended Reading" section of your email, and they do the same for you ¹¹. Rotate these collaborations periodically to continuously reach fresh audiences ¹². Such partnerships, when done authentically, can rapidly increase exposure to *relevant* readers who are likely to be interested in generative AI content.

Deep research tools

- The following platforms have deep research tools:
 - ChatGPT
 - Google Gemini
 - Microsoft Copilot (the Analyst and Researcher agents)
 - Claude
 - Grok

Agents

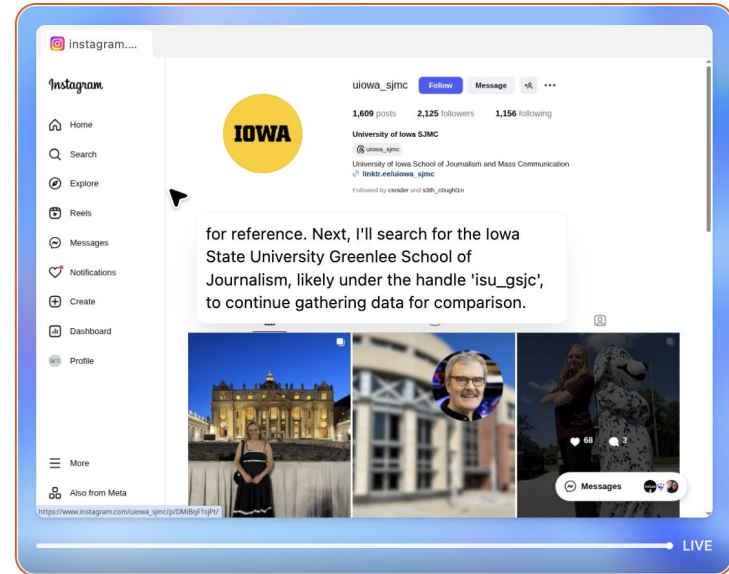
- AI agents are systems that are narrowly defined to carry out specific tasks autonomously.
- Agents can carry out tasks on the web that involve using your mouse and keyboard, navigating multiple websites, gathering information, and so on.
- ChatGPT agents:
 - Deep Research (out now)
 - Operator (available in ChatGPT agent)



ChatGPT agent in action

- We used ChatGPT agent to take control of an Instagram account, do research on competitors on Instagram and engage with other accounts.

Recording follower count, searching Greenlee



ⓘ Sensitive data · Something not right? [Stop agent](#)

Custom GPTs, Gems, etc.

- Personalized AI assistants that you can shape to fit your work or life.
- Let you teach an AI how to act, give it access to your files or tools, and have it help you brainstorm, analyze, write, and automate tasks.
 - ChatGPT - Custom GPTs
 - Gemini - Gems
 - CoPilot - Agents



AI 010 Syllabus Expert

By Chris Porter 🔗

Your expert guide for everything on the AI 010 syllabus.

What are
the course
requirements?

When is the next
assignment due?

How will
participation
be graded?

What topics will
be covered in
the final exam?

Ask anything



AI-generated images

- Generative AI image tools can create realistic images in any style from text prompts, edit and transform existing images, generate variations of an image, create logos, create storyboards and visualize ideas that don't usually go together.
- Leaders in this space: Midjourney, ChatGPT 4o, Ideogram, Google Imagen, Adobe Firefly



OpenAI 4o changes the game

- OpenAI's newest image model, released March 25, can create high quality images with great attention to details, including text.

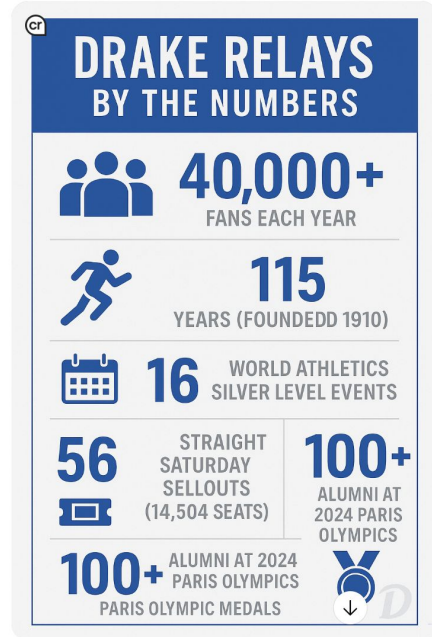
Create image A 40-year-old male college professor stands in front of a white board in a large auditorium. The man has short brown hair and a short brown beard. He is wearing a brown sports jacket over a blue button-up shirt with no tie. The white board has the words "Welcome to Gen AI Class: Today we will be learning about AI image tools." Then it includes a list of some AI image tools, that you should create. There is a desk with a laptop computer and a blue water bottle on one side and we see a couple students entering the class. One student is wearing a blue t-shirt that says "Drake University" on it. Make the image square



create a graphic with statistics about the Drake Relays - number of fans, number of athletes, how long it's been going on, etc.. The graphic should use colors of Drake University.

Thought for 1m 4s >

Image created



Here's a clean, Drake-blue infographic you can share or drop straight into a slide deck. It spotlights the big numbers that make the Drake Relays special:

- **40,000+ fans** pour through the gates each year [Drake University](#)
- **5,000+ athletes** from middle-schoolers to Olympians compete on the Blue Oval [Drake University](#)
- **115 years running** — the 1910 start makes 2025 the 115th edition [Drake University Newsroom](#)
- **16 World Athletics Silver-level events** on the 2025 program [Drake University Athletics](#)
- **56 consecutive Saturday sell-outs** (14,504 seats each) [Drake University Athletics](#)
- **100+ Relays alumni at the 2024 Paris Olympics** [Drake University Athletics](#)
- **19 medals** earned by those alumni in Paris [Drake University Athletics](#)

Create image Two men in camouflage army gear leaning over a computer and yelling at the computer. The computer sits on the ground and has an image of a person doing a pushup on the screen. Words on the computer read "Generative AI Boot Camp"



make these the men

Image created



Image created



Generative AI audio

- Generative AI audio tools make sound creation as easy as typing a description. You don't need to be a musician, voice actor, or audio engineer to produce high-quality audio.
 - Create music and sound effects from text prompts
 - Create synthetic voices or clone voices
 - Improve clarity of audio



AI-generated audio tools

- ElevenLabs – Hyper-realistic voice cloning and narration
- Suno – AI music generation with lyrics
- Adobe Podcast – Audio cleanup and voice enhancement

Generative AI video

- Create videos from text or images
- Edit and enhance existing videos
- Create realistic looking talking avatar videos
- Make explainer videos
- Prototype video scenes before shooting

Generative AI video tools

- Google Veo v3: includes audio with video clips
- KlingAI, Runway: Quality option for text-to-video
- Synthesia / HeyGen - Talking avatar videos from a script
- Descript - edit audio and video clips



Putting Generative AI to Work



What do Gen AI tools do well?

- Generating human-like text and code on a wide variety of subjects
- Analyzing text, data, and other information, and providing summaries, insights, and recommendations
- Helping with all kinds of tasks like research, brainstorming, proofreading and language translation
- Creating novel ideas, stories, poems, and solutions to open-ended problems
- Following directions and completing tasks as instructed



What do Gen AI tools do well?

- Create images and graphic designs
- Text-to-video and photo-to-video creation
- AI music, voice and sound design
- Automated marketing copy and personalization
- Tutoring and study companion

Using AI in your job



JobsGPT by SmarterX.ai

By smarterx.ai  

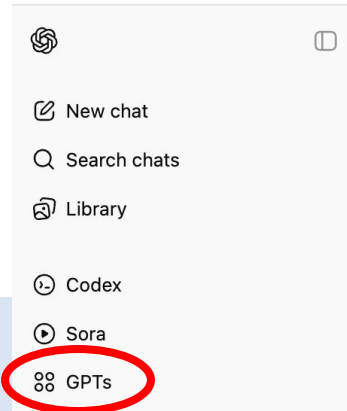
Prioritize AI uses by breaking jobs down into a series of tasks.
Prepare for the future of work by assessing the exposure levels of
jobs to smarter, more generally capable AI models. Forecast potential
new jobs AI could create by industry, profession or college major.
(v2.0 beta)

Enter a job title.

Submit a
job description.

Forecast new jobs.

- Explore adding generative AI to your job using JobsGPT by SmarterX.ai
- This is an example of a custom GPT



JobsGPT

Here's an assessment of the job **Legal Assistant**, showing how a powerful LLM could impact various tasks in that role:

Task	Exposure Level	Estimated Time Saved (%)	Rationale
Drafting routine legal documents (e.g., NDAs, memos, letters)	E1	50–70%	LLMs can generate accurate legal drafts from templates and prompts, significantly reducing time spent on formatting and writing.
Conducting legal research	E1/E2	40–60%	LLMs can identify relevant cases, statutes, and legal precedents quickly. Research assistants powered by LLMs offer search, summarization, and citation tools.
Reviewing and summarizing case files or discovery documents	E3	30–50%	LLMs with image capabilities can process scanned legal documents and generate summaries or extract key points.
Managing client communications (emails, intake forms, scheduling)	E2	20–40%	LLM-enabled CRM tools can auto-draft responses, summarize client histories, and suggest next steps.
Filing legal documents with courts	E2	10–20%	LLM-powered apps can help format and organize filings, but human oversight is still needed for compliance.
Transcribing and organizing notes from attorneys	E5	30–50%	With audio capabilities, LLMs can transcribe and structure notes from dictation or recorded meetings.



Gen AI Productivity Tools

- Microsoft 365 Copilot
- Google Workspace
- OpenAI Teams - integrates with a Google Drive

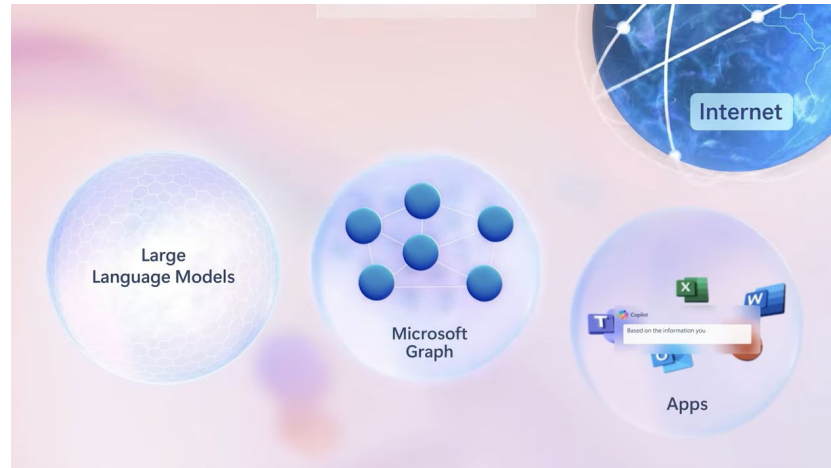
What is Microsoft 365 Copilot

- Microsoft 365 Copilot is your AI assistant for work.
- Powered by Large Language Models (LLMs) and utilizing your business data from Microsoft Graph, Copilot aims to spark creativity, boost productivity, and foster new skills.
- It integrates with the Microsoft 365 suite, including popular applications like Teams, Word, Outlook, PowerPoint, and Excel.



Microsoft Graph

- The key element is the Microsoft Graph, which includes information about the relationships and activities over your organization's data



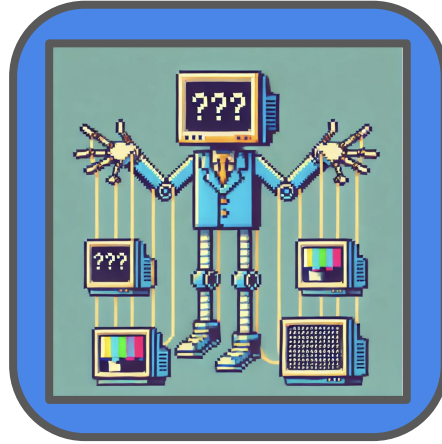
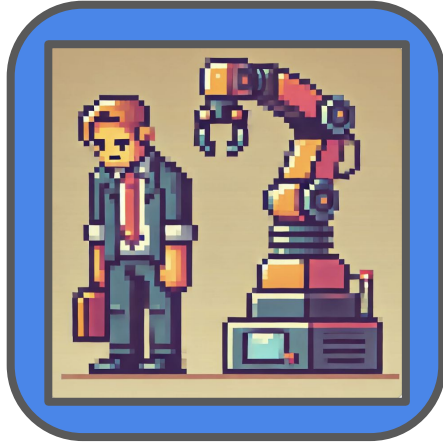
How you might use

- Examples of Microsoft 365 Copilot in action may include:
 - **Outlook:** Summarize the content of a large email thread.
 - **PowerPoint:** Turn a text-heavy slide into concise bullet points for greater clarity.
 - **Word:** Rewrite a paragraph in a different tone or style.
 - **Teams:** Summarize meetings and chat threads.



Legal and Ethical Issues





Hallucination



- Generative AI tools can be prone to misrepresenting the world
- In the text generation world, we call this hallucination
- In the image/audio/video world, we can find similar unintentional misrepresentations

Bias



- Generative AI systems may propagate biases found within the data they learn from
- We call this algorithmic bias
- Caution must be exercised to ensure our AI tools don't produce content that biased in some way

Intellectual Property



- Serious intellectual property questions are raised by generative AI
- Does it violate copyrights to train generative AI systems on the work of authors, artists, musicians, and filmmakers?
- Who owns the output of generative AI systems?

Security / Privacy



- Is my own data being used to train new models when I enter it into a generative AI system?
- Is there certain information I should never input into a generative AI system?
- To what extent are generative AI systems vulnerable to attacks and jailbreaks?

Environmental Impact



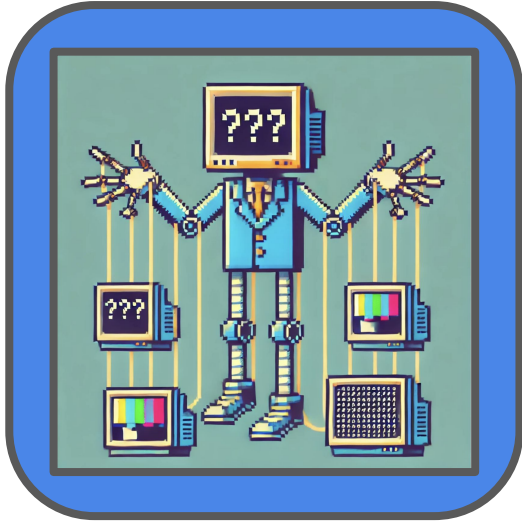
- What are the environmental costs associated with building and using generative AI systems?

Workforce Displacement



- What jobs will be rendered obsolete by generative AI?
- What jobs will be significantly altered by generative AI?
- How do we get ahead of these changes?

Misinformation



- Generative AI tools can be used for nefarious purposes, to produce realistic but misleading images, audio, and video.
- What protections can we put into place to prevent this abuse of AI tools?

Harmful Content



- Generative AI systems are trained on content from the internet, and thus harmful content is latent within these systems.
- How can we build in safeguards into these systems to prevent the production of harmful content?

Where Gen AI is heading



AGI and ASI

- **Artificial General Intelligence:** AGI refers to AI systems that would be capable of understanding, learning, and applying knowledge and skills across a broad range of tasks and domains at a level comparable to human intelligence.
- **Artificial Super Intelligence:** ASI refers to AI systems that would surpass human intellectual capabilities across virtually every domain, including scientific creativity, social skills, and strategic reasoning.

The road to AGI

- OpenAI has outlined a five-level framework to track the progression of artificial intelligence (AI) toward achieving Artificial General Intelligence (AGI).
- This structured approach delineates the capabilities and milestones at each stage.

1: Conversational AI/Chatbots

- AI systems are designed to engage in natural language conversations with humans. Examples include chatbots and virtual assistants like OpenAI's ChatGPT, which can handle customer service interactions and provide basic assistance.
- These systems are limited to language-based tasks and lack complex problem-solving abilities.



2: Reasoners

- AI systems capable of solving problems at a human level. A Level 2 AI would provide more accurate responses and evaluate the reliability of its answers, thus overcoming the limitations seen in enterprise settings today.
- We are solidly in Level 2 with the development of models like ChatGPT o3, designed to enhance AI's reasoning capabilities.
- OpenAI released its first reasoning model in Sept. 2024.



3: Agents

- AI systems, referred to as 'Agents,' can autonomously perform tasks on behalf of users over an extended period. These systems can operate independently without constant human intervention, potentially revolutionizing business operations and efficiency by handling a variety of tasks across different domains.



4: Innovators

- AI systems are capable of creating new innovations. This involves not just solving problems but also coming up with original ideas and inventions.

5: Organizers

- AI can perform the work of entire organizations. This level of AI would be capable of managing complex processes, making high-level decisions, and coordinating large-scale operations.



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