

Part I

For Power Users

1 The Brains Behind Copilot

Copilot is built upon an **LLM - a Large Language Model**.

Imagine you're a voracious reader, constantly reading every book, article, and blog post on the Internet. That's what an LLM does, **except it processes information at lightning speed**. LLMs are trained with books, college courses, financial reports, scientific papers, e-books, computer code, social media posts, Wikipedia, websites, and much more. Even the most caffeinated reader can't keep up with LLMs!

The LLM - Your Digital Library

Think of an LLM like a massive digital library, with Copilot as its librarian. The LLM is trained on massive amounts of text, like one library housing nearly all of the books and articles *in the world*.

LLMs run on software on racks and racks of computers, which are periodically updated with additional data. In each update – 3 to 3.5, 4o to GPT5 - the LLM is fed more data, making significant gains in knowledge.



Remember visiting a physical library looking for a physical book? It takes time, since books are indexed in a particular way on the shelves. Oftentimes, it's easier to ask for help. **When asking Copilot a question, you're asking your digital librarian for a summary - of the relevant information from all the materials in the massive digital library.**

Programmed to Predict

Today's LLMs may seem smart, but they're quite limited. Based on all their training information, LLMs have a very good idea of what words go together. They're programmed to simply predict the next word in a sentence, and the next sentence in a paragraph, and so on.

Just like your phone's autofill, GenAI simply predicts what will come next, by *predicting the statistically most likely thing that comes next in a sequence of letters, words, or code*. It's making an educated guess based on the patterns of text on which it's been trained. That's why GenAI tools are called GPTs (Generative Pretrained Transformers).

That's also why Wall Street Journal tech writer Cordilia James gave a solid ground rule: **“Only use AI to do work you can easily verify, and be sure to check its work.”¹**

At the local library, books may contain outdated information or biased viewpoints. LLMs can inherit similar shortcomings from the data on which they are trained. Be aware that LLMs' responses, while informative, may not always be perfectly accurate or objective. Just like your librarian may be biased, it's important to view an LLM's response with a discerning eye.

Smartphone users - if you cringe here thinking about the last time you sent an embarrassing text with an auto-corrected word, you should! You're onto the first caveat of LLMs.

Copilot Adds Work Data to the Library

When using Microsoft 365 Copilot, you're using the information that's fed into an LLM, **plus** the data you use at work – your files, emails, chats, meeting transcripts, company policies, templates, and process documents.² **It's like combining the library with your organization's file cabinets and hard drives.** All this can be fed into the LLM when you provide a relevant prompt. Then, the LLM's responses are much more relevant to your work.

Copilot can provide the best of both worlds! If an organization's IT and security departments are willing, **Copilot can also use information from the web in its search and responses.** That way, if you want to author a report about a customer, your data (from meetings, proposals, project files) can be complemented by information from the web (your customer's size, locations, and financials).

All that knowledge makes Copilot do some amazing things that are covered in upcoming chapters. **Yet without human guidance, it's not always amazing and can sometimes be confusing.**

Neighborhood librarians may know books about business, but they don't know about your organization's business, right?

Note: Copilot uses the same underlying technology as ChatGPT, but in an organization's private, secure enclave. **Nothing sent or received is stored or used to train the LLM.** To learn about the differences, see Chapter 21, "Comparing ChatGPT & Copilot."

Every Copilot Needs a Pilot

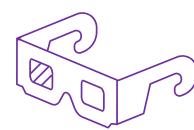
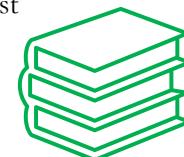
Why do GenAI tools like Copilot need a *critical thinking human* to guide them?

The Immensity of Information. The world of language is vast and ever-changing. Slang pops up, technical terms evolve, and companies change acronyms and policies. LLMs, despite their vast knowledge, can't know everything. If asked about a niche project or using uncommon terms, Copilot's suggestions might be off the mark.



Context Matters! Imagine showing a picture of a coyote to an infant for the first time. They might describe it as a dog, based on their limited knowledge. Similarly, LLMs struggle with context. They can analyze the sequence of words you've typed, but they can't grasp the deeper meaning or purpose of your writing or code. This can lead to suggestions that seem nonsensical or irrelevant to the task at hand.

Bias and other Bummers. Much like social media algorithms, LLMs can be influenced by the data they're trained on. If that data contains biases or errors, it can be reflected in Copilot's suggestions. For instance, imagine you ask Copilot to author a report on an internal project code-named "Holiday." If the only related information in your OneDrive or SharePoint is about last December's office party, Copilot may create new text with a strangely yuletide tone, rather than about the project you expected.



So, what does this mean for you, the Pilot? It means recognizing the tradeoff and understanding that ***GenAI works best with precise commands.***

Copilot Can't Read Minds

Ask a good librarian for a book on history, and they might ask several questions to narrow in on the right epoch, topic, and theme.

Similarly, Copilot is an amazing tool, but it's not a mind-reading machine. Think of Copilot as an electronic librarian or intern, taking direction from your tutelage. Here are some tips to get the most out of it:

- Use Copilot to spark innovative ideas, then refine its draft to complete your task.
- Be specific.
- Review its suggestions with a critical eye. If something is awry, reject it, and try again.

With this added understanding of how LLMs work and their limitations, **it's time to learn how to write a good prompt.**

Caution! Savvy readers can differentiate human vs. AI-generated tex. Watch for bullet lists with colons, em dashes, and overexuberance as giveaways!

¹ **The Smartest Way to Use AI at Work - WSJ**

² Copilot expects files to be in OneDrive, SharePoint, and other Microsoft 365 apps. If configured by your IT team, it can access other data sources.