

第 12 章 CHAPTER

12 人工智慧優先應用的現代資訊架構 Modern Information Architecture for AI-First Applications

今天可以被認為是“人工智慧優先”的大部分內容都是基於聊天的，正如雅各布·尼爾森（Jakob Nielsen）正確指出的那樣，“聊天是新的命令行。（1）雖然 NLP 命令列無疑比 Linux

命令列友好得多，但即使對於最簡單的用例，它也無法成為完整的應用程式。即使使用“AI Girlfriend”這樣的“聊天轉發”應用程序，您仍然需要偶爾設置新的虛擬電子寵物、添加服裝、帶他們去吃飯，以及此類虛擬伴侶所需的任何其他維護和編輯任務。肯定是訂閱付款之類的……（我不會知道……不，老實說！

Much of what can be considered “AI-first” today is based on chat, and as Jakob Nielsen so rightly pointed out, “Chat is the new command line.” (1) While the NLP command line is undoubtedly much friendlier than the Linux command line, it does not make for a complete application even for the simplest use cases. Even with such “chat-forward” applications as “AI Girlfriend,” you still need to occasionally set up your new virtual Tamagotchi, add outfits, take them to dinner, and whatever other maintenance and editing tasks such a virtual companion requires. Definitely subscription payments and such ... (I wouldn't know ... No, honestly!)

更大的一點是，對於大多數用例來說，僅聊天並不是一個完整的界面。正如我們在第 7 章「SaaS Copilot 設計的 UX 最佳做法」中詳細討論的那樣，Copilot 最常在側邊欄中實作，並不是 AI 優先的應用程式。它充其量只是現有功能的附加組件，旨在提供諮詢和有用的功能，而應用程序的原始信息架構（IA）保持不變。

The larger point is that a chat alone is not a complete interface for most use cases. As we discussed at length in Chapter 7, “UX Best Practices for SaaS Copilot Design,” Copilot, as it is most frequently implemented in a sidebar, is not an AI-first application. It is, at best, an add-on to the existing functionality meant to serve in an advisory and helpful capacity while the original information architecture (IA) of the app remains the same.

聊天的所有這些限制現在都應該被當今的模式所超越：畫布。

All these limitations of chat are supposed to be now transcended with the pattern du jour: the Canvas.

今日設計圖案：畫布

Design Pattern du Jour: The Canvas

ChatGPT 推出的 Canvas (2)

風靡一時，許多設計師似乎認為它將解決他們現在和未來的所有 IA 問題（見圖 12.1）。

The Canvas (2) introduced by ChatGPT is all the rage, with many designers seeming to think it will solve all their present and future IA problems (see Figure 12.1).

再次，我很抱歉讓您失望——即使您現在可以在新窗口中將您的新虛擬朋友從聊天中彈出，他們仍然需要個性編輯屏幕、歡迎體驗、訂閱級別屏幕和付款歷史記錄等。

Again, I ' m sorry to disappoint you—even if you can now pop your new virtual friend out of the chat in a new window in all their glory you ' ll still need a personality edit screen, welcome experience, subscription level screen, and payment history, among other things.

一般來說，

As a general rule,

The screenshot displays the ChatGPT Canvas interface. On the left, a poem titled "Space Crocodiles" is shown. A prompt asks the user to "count the number of characters in each line and put it in a table". The Canvas has generated a table with the following data:

Line	Character Count
1	50
2	36
3	43
4	47
5	0
6	35
7	39
8	44
9	43
10	0
11	35
12	43

On the right, the Canvas has generated a response that repeats the poem and includes a prompt to "count the number of characters in each line and put it in a table". The interface also shows a "Get citation" button and a "Message ChatGPT" input field.

圖 12.1 太空鱷魚：畫布設計圖案的實際應用

Figure 12.1 Space Crocodiles: Canvas design pattern in action

來源：ChatGPT 中使用 AI 生成

Source: Generated with AI in ChatGPT

便條

NOTE

對 ChatGPT 有好處的東西（不可否認，新的 Canvas 模式非常棒）不一定適合您的 SaaS 或電子商務應用程序，甚至不一定是必要的。正如我們在本書第 1 部分中討論的：您的用例統治一切！

What is good for ChatGPT (and admittedly, the new Canvas mode is pretty freakin' awesome) is not necessarily appropriate or even necessary for your SaaS or e-commerce application. As we discussed in Part 1 of the book: Your use case rules everything!

在這個日常人工智慧新奇事物的時代，使用者體驗設計師必須不要盲目複製，而是花時間了解新人工智慧模型的功能，並透過將它們用於對客戶重要的特定用例來發揮創意。

It is essential for UX designers in this age of daily AI novelties not to copy blindly but instead to take the time to understand the capabilities of the new AI models and get creative by putting them to use for specific use cases that matter to your customers.

便條

NOTE

現在不是複製的時候，而是發明的時候。

Now is not the time to copy—it is the time to invent.

信息架構已經消亡了嗎？

Is Information Architecture Dead?

在人工智慧聊天泛濫的時代，許多使用者體驗人士似乎認為 IA 已經死了。我想介紹一個不同的想法。根據我對 35 個 AI 驅動專案的研究，如果您的 AI 優先體驗以聊天開始和結束，客戶通常難以理解您的應用程式的功能及其可以提供的具體價值

。客戶還需要幫助提出提供最大價值的查詢。視您的應用程式而定，客戶也需要瞭解某些時間敏感的開發，例如警示、銷售等。

In the age of AI chat 's proliferation, many UX folks seem to think that IA is dead. I 'd like to introduce a different idea. Based on my research with 35 AI-driven projects, if your AI-first experience starts and ends with chat, customers often have trouble understanding what your application does and the specific value it can deliver. Customers also need help coming up with queries that deliver the most value. Depending on your application, customers also need to be made aware of certain time-sensitive developments, like alerts, sales, and so forth.

聊天並不同樣適用於所有情況，因為它通常只是等待用戶提出問題，這對於每個應用程式來說都遠非理想，因為：

Chat does not apply equally to all cases because it often simply waits for the user to ask a question, which is far from ideal for every single application because:

便條

NOTE

向某事或某人發出指示真的很困難。你只需要玩著名的派對遊戲“ Build a Sandwich ”，就知道這是多麼真實！

Giving instructions to something or someone is really hard. You only need to play the famous party game “ Build a Sandwich ” to understand how true that is!

雖然現代法學碩士在解釋不精確指令方面比人類歷史上迄今為止的任何電腦都要好得多，但有時您需要一組預定的查詢和體面的起點，甚至需要了解應用程式中發生的情況。這在數位領域尤其重要，因為我們無法存取環境背景，也無法與人工智慧代理共享歷史。

And while modern LLMs are much better at interpreting imprecise instructions than any computers so far in the history of humanity, sometimes you want a predetermined set of queries and decent starting points even to understand what is happening in your app. This is especially important in the digital realm, where we do not have access to environmental context and have no shared history with the AI agent.

便條

NOTE

要正確地實現人工智慧優先，您需要資訊架構。

To do AI-first right, you need information architecture.

幸運的是，使用我新的人工智慧優先資訊架構框架可以輕鬆解決這個問題。然而，我應該提前警告你（並重複這個令人作嘔的句子）：

Fortunately, this problem can be reasonably easy to solve with my new AI-first Information Architecture framework. However, I should warn you up front (and repeat this ad nauseam):

便條

NOTE

請不要只是複製這個想法;相反，請將其用作您自己的應用程式的靈感，以解決客戶的獨特用例。

Please do not merely copy this idea; instead, use it as inspiration for your own app to solve your customers ' unique use cases.

為了展示這種新方法，讓我們將傳統 Amazon.com 頁面的 IA 與可能想像的人工智慧優先 Amazon.com 進行比較。

To demonstrate this new approach, let ' s compare the IA for the conventional Amazon.com pages with what might be imagined as AI-first Amazon.com.

Amazon.com：傳統方法

Amazon.com: Conventional Approach

讓我們使用電子商務網站的典型例子，回到我在 2011 年的第一本書《設計搜索：電子商務成功的用戶體驗策略》（3）中寫過的第一個例子之一：強大的 Amazon.com。

Let ' s use the quintessential example of an e-commerce site, going back to one of the very first examples I had ever written about in my very first book, Designing Search: UX Strategies for

eCommerce Success (3) back in 2011: the mighty Amazon.com.

出於本練習的目的，我們可以將網站大致分為四個部分：主頁、搜尋結果頁面、項目詳細資訊和維護（包括過去的訂單、結帳、退貨、付款、地址等）。

For the purposes of this exercise, we can divide the site roughly into four parts: Homepage, Search Results Page, Item Detail, and Maintenance (which includes things like Past Orders, Checkout, Returns, Payments, Addresses, etc.)

“ AI-減號 ” ? 首頁

“ AI-Minus ” ? Homepage

毫無疑問，Amazon.com 已經在很大程度上是一個 AI 優先的應用程序，主頁很容易反映這一點，根據算法認為他們可能喜歡的東西來吸引用戶進行銷售（見圖 12.2）。

As you are no doubt aware, Amazon.com is already largely an AI-first application, and the homepage easily reflects this, tempting the users with sales based on stuff the algorithm thinks they might like (see Figure 12.2).

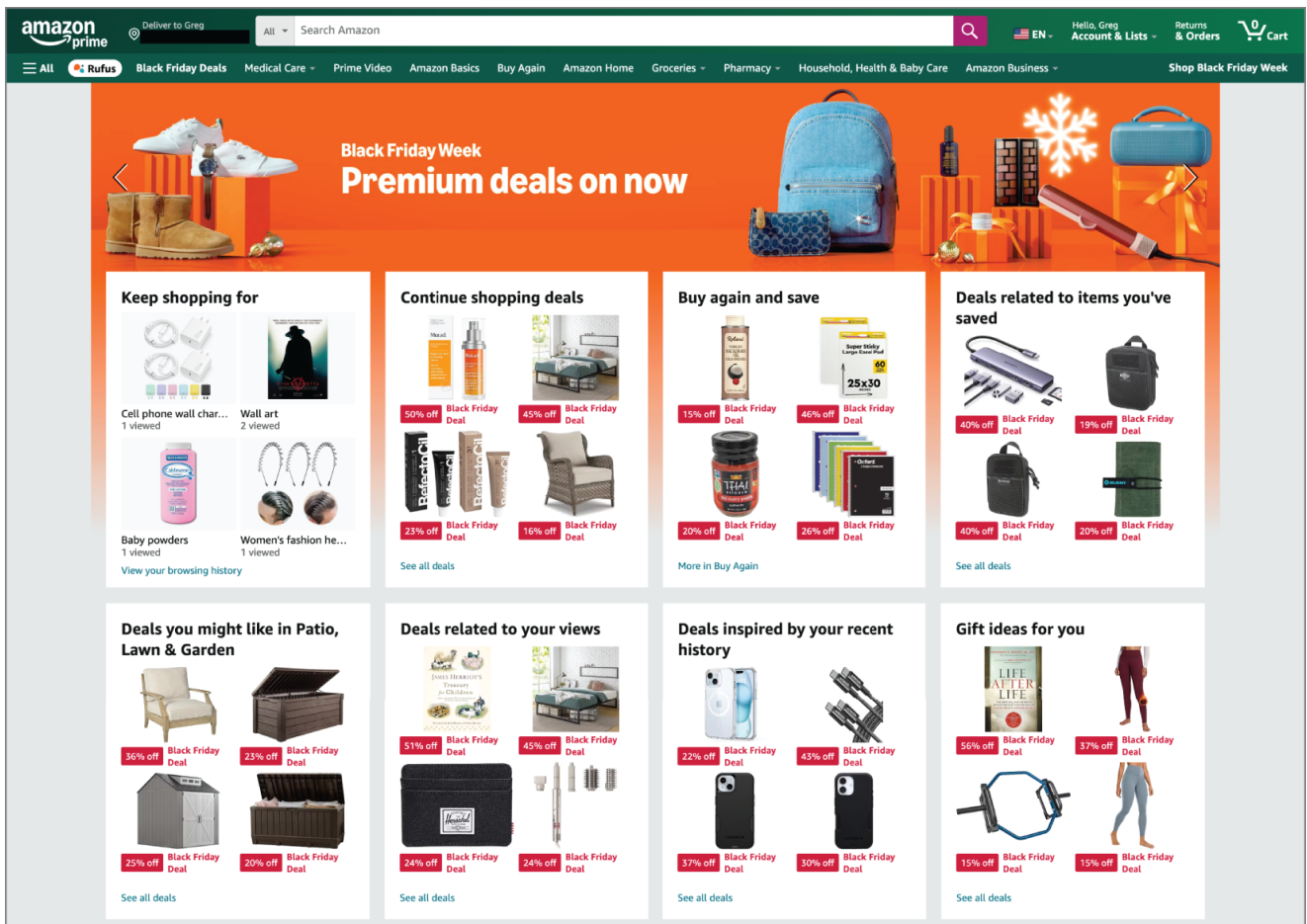


圖 12.2 “AI-minus” ——亞馬遜主頁大部分是無用的垃圾

Figure 12.2 “AI-minus” —Amazon homepage of mostly useless junk

來源：Amazon.com

Source: Amazon.com

不幸的是，演算法似乎不知道我真正需要或想要什麼（正如我們在上一章中已經詳細討論的那樣）。例如，我已經購買了一些草坪家具，那麼我購買更多的可能性有多大？一個人需要多少個壓豆腐機？為什麼它一直頑固地建議我需要更多 V for Vendetta 海報？（它是否知道我也在地下室裡放了大量非法的極端自由主義[純素]黃油、美術品和娜塔莉·波特曼，為新政權接下來的四年做準備？

Unfortunately, the algorithm seems to have no clue about what I actually need or want (as we already discussed at length in the previous chapter). For example, I’ve already purchased some lawn furniture, so how likely am I to buy more? How many tofu presses does one person need? And why does it stubbornly keep suggesting that I need more V for Vendetta posters? (Does it know that I, too, keep loads of illicit ultra-liberal [vegan?] butter, fine art, and Natalie Portman in my basement in preparation

for the next four years of the new regime?)

常規搜尋結果頁面

Conventional Search Results Page

搜尋頁面是典型電子商務網站的核心，通常佔整體流量的最大份額。雖然 Amazon.com 的結果令業界羨慕不已，但正如我們在第 10 章「搜尋使用者體驗革命：搜尋 UI 中的 LLM AI」中所回顧的那樣，複雜的 NLP

查詢（例如「不可怕的謎團」）的搜尋基本上失敗了。圖 12.3 顯示了類似的查詢，這次受產品類別 Books 的約束。

Search pages are the heart of a typical e-commerce site, frequently accounting for the lion's share of the overall traffic. While Amazon.com's results are the envy of the industry, the search largely fails for complex NLP queries such as "Mysteries that are not scary," as we have reviewed in Chapter 10, "Search UX Revolution: LLM AI in Search UIs." Figure 12.3 shows a similar query, this time constrained by product category, Books.

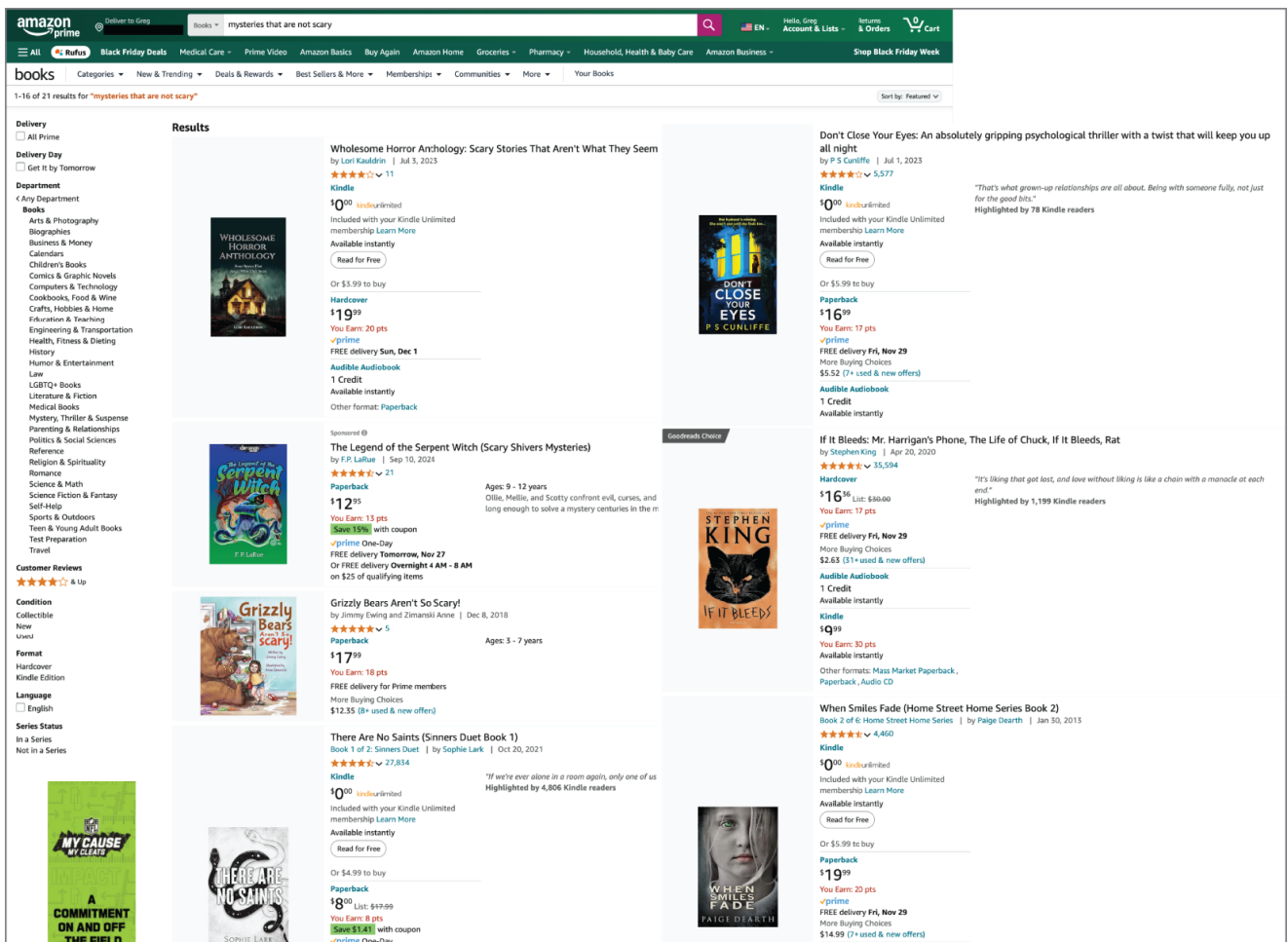


圖 12.3 “不可怕的謎團”的書籍結果是不同實際恐怖程度的搜索結果的大雜燴

Figure 12.3 Books results for “Mysteries That Are Not Scary” are a hodgepodge of search results of different actual scariness

來源：Amazon.com

Source: Amazon.com

就像我們上次在第 10 章中回顧此查詢一樣，書籍產品類別的結果也包括大量點擊。從兒童讀物到史蒂芬·金非常可怕的《如果流血》，再到可能令人恐懼的《別閉上眼睛》，它有望成為“一部絕對扣人心弦的心理驚悚片，其轉折會讓你徹夜難眠”。

Just as the last time we reviewed this query in Chapter 10, the Books product category results also include a hodgepodge of hits. From children’s books to Stephen King’s very scary If It Bleeds to the presumably terrifying Don’t Close Your Eyes, which promises to be “An absolutely gripping psychological thriller with a twist that will keep you up all night.”

結果幾乎但完全與我們實際要求的結果完全不同。

Results that are almost but entirely completely unlike what we actually asked for.

顯然，現代 LLM 功能並不多！

Clearly, not many of the modern LLM capabilities are in evidence!

AI-Plus 商品詳情頁面

AI-Plus Item Detail Page

與搜尋結果相比，「項目詳細資訊」畫面是 Amazon.com 的 LLM 功能真正發揮作用的地方，如圖 12.4 所示。

In contrast to search results, the Item Detail screen is where the LLM capabilities of Amazon.com really come out to play, as you can see in Figure 12.4.

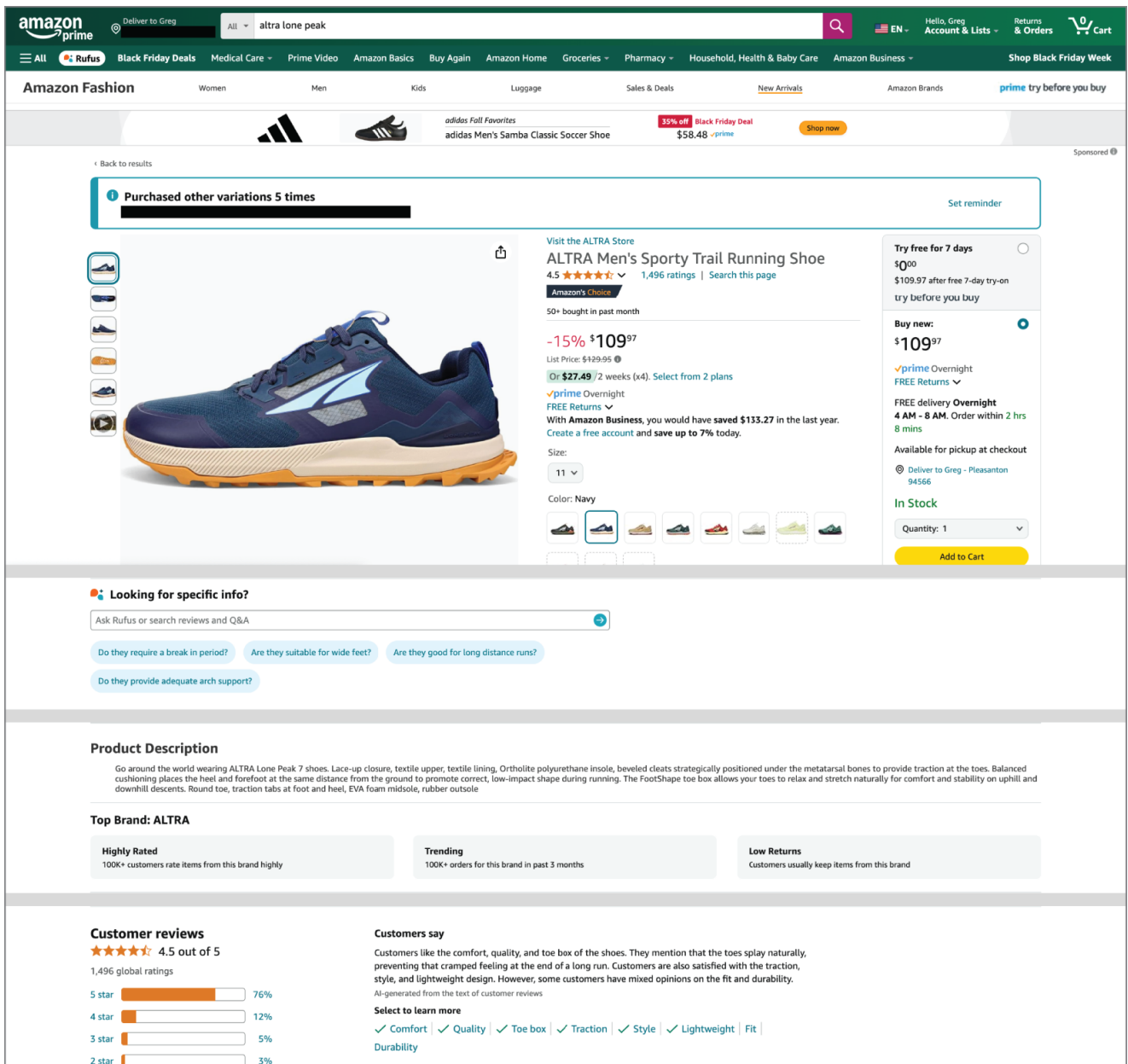


圖 12.4 「項目詳細資料」畫面的 AI-plus 功能

Figure 12.4 AI-plus features of the Item Detail screen

來源：Amazon.com

Source: Amazon.com

人工智慧推動了大部分內容，從「尋找特定資訊」的問題想法到重要的品牌特定趨勢，最後到高度使用且廣受歡迎的評論摘要功能，這無疑非常出色。請注意，頁面頂部的主搜索框仍保留我們的原始查詢。如果我們想在這個名副其實的頁面怪物中搜索某些內容（它滾動超過 20,000 個垂直像素），我們必須使用瀏覽器頁面搜索（Command+F;Ctrl+F）、特定 Q&A 搜尋框或搜尋使用者評論——所有個別的搜尋框！

AI drives much of this content, from “ looking for specific info ” question ideas to important brand-specific trends and finally to a highly used and well-liked reviews summarization feature, which is admittedly excellent. Note that the main search box at the top of the page still retains our original query. If we wanted to search for something in this veritable monster of the page (it scrolls for over 20,000 vertical pixels), we ’ d have to use the browser page search (Command+F; Ctrl+F), the specific Q&A search box, or search user reviews—all separate search boxes!

傳統維護頁面

Conventional Maintenance Pages

最後，我們還有一組維護頁面，這些頁面如今完全是戰術性的，很少或根本沒有人工智慧功能。這些頁面主要由具有基於時間的 LIFO（後進先出）排序算法的直接列表組成。每個頁面還帶有自己的目標搜索框。

Finally, we also have a set of maintenance pages that today are completely tactical, with little or no AI features. These pages mainly consist of straight-up lists with time-based LIFO (last-in-first-out) sort algorithms. Each of these pages also comes with its own targeted search box.

現在，讓我們來看看如何使用我們的新框架重新設計像 Amazon.com 這樣的網站，使其成為「人工智慧優先」。

Now, let ’ s examine how a site like Amazon.com might be redesigned to be “ AI-first ” using our new framework.

人工智慧優先的 Amazon.com 重新設計

AI-First Amazon.com Redesign

正如我們之前所討論的，簡單地啟用基於 LLM 的搜尋雖然是一個良好的開始，但並不能滿足 Amazon.com 涵蓋的所有用例。我們可以做更多的事情！我們新的「人工智慧優先亞馬遜」網站的幾乎所有功能都可以由人工智慧驅動。

As we discussed earlier, simply enabling an LLM-based search, while a fine start, will not fulfill every single use case covered by Amazon.com. We can do much more! Nearly every feature of our new “ AI-first Amazon ” site could be driven by AI.

重要的是，沒有必要大幅改變舊 IA 的重點，但我們當然可以更好地採用現代 AI 的功能。以下五種類型的頁面是一個很好的起點：分析概述、類別分析、LLM 搜尋結果、項目詳細資訊和維護。這些構成了人工智慧優先資訊架構框架的核心。到目前為止，新舊 IA 之間沒有太大區別，但正如他們所說，魔鬼在細節中。

Importantly, there is no need to drastically change the focus of the old IA, but we can certainly do a better job of adopting to the capabilities of modern AI. An excellent place to start are the following five types of pages: Analysis Overview, Category Analysis, LLM Search Results, Item Detail, and Maintenance. These form the core of the AI-first Information Architecture framework. So far, there is not much difference between the old and the new IA, but the devil, as they say, is in the details.

讓我們仔細看看。

Let ' s take a closer look.

AI-First 分析概觀頁面

AI-First Analysis Overview Page

舊的主頁可以替換為 AI 優先的分析頁面。雖然這看起來是一個很小的轉變，但變化可能是廣泛的。例如，在我寫這篇文章的時候，現在是假日購物的季節——這意味著所有零售商每年都會齊心協力，通過瘋狂地從中國購買打折（但很快就會被徵收高額關稅）商品，分散民眾對通常的右翼不滿和全球變暖引發的大規模颶風的注意力。

The old homepage can be replaced by an AI-first Analysis page. While this may seem like a small shift, the change can be extensive. For example, as I write this, it ' s the Season for Holiday Shopping—which means that all of the retailers make a concerted once-a-year effort to distract the populace from the usual right-wing grievances and massive hurricanes driven by global warming through the frenzied acquisition of discounted (but soon to be heavily tariffed) goods from China.

我絕不能干涉這樣一個神聖的美國年度傳統！事實上，我建議加倍努力使用法學碩士來推動通常的狂熱。圖 12.5 顯示了 ChatGPT 4o 提供的快速線框圖。想像一下一些物品圖像細節（也許還有人群為最後一個 Tickle Me Elmo 而殊死搏鬥的動態鏡頭），你就在那裡。

Far be it for me to interfere with such a sacred American yearly tradition! In fact, I ' d recommend doubling down on driving the usual frenzy using an LLM. Figure 12.5 shows a quick wireframe of what

that might look like, courtesy of ChatGPT 4o. Just imagine some item image details (and maybe a dynamic shot of the crowd fighting to the death over the last Tickle Me Elmo), and you are there.

Black Friday	Fishing	Gardening	Working out	For your Pooch
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Top Black Friday Deals

Electronics & Gadgets

- **iPhone 16 Charger Combo:** Fast Charging USB-C Block + 2 Pack 6FT Cables - *Only \$19.99 (50% off!)*
- **Samsung Galaxy S24 Ultra (256GB):** The ultimate smartphone experience - *Now \$949.99 (27% off!)*
- **Beats Solo 4 Wireless Headphones:** Crystal-clear audio, all-day battery life - *Just \$99.99 (50% off!)*
- **Samsung 49" Odyssey G93SC OLED Gaming Monitor:** Immersive 240Hz gaming - *Only \$949.99 (41% off!)*

Beauty & Personal Care

- **Neutrogena Retinol Face Moisturizer:** Anti-aging hydration for radiant skin - *\$15.99 (30% off!)*
- **Murad Rapid Dark Spot Correcting Serum:** Say goodbye to blemishes - *\$38.00 (50% off!)*
- **Dyson Supersonic Hair Dryer:** Luxurious styling power - *\$329.00 (23% off!)*
- **COSRX Snail Mucin Serum (100ml):** Korean skincare essential - *\$12.99 (48% off!)*

Home Essentials

- **Rubbermaid Resin Outdoor Storage Shed:** Organize your space - *\$599.99 (25% off!)*
- **Cuisinart 17-Piece Cookware Set:** Elevate your kitchen - *\$143.99 (42% off!)*
- **Dyson V15 Detect Cordless Vacuum:** Next-level cleaning technology - *\$599.99 (20% off!)*

Fashion Favorites

- **ORORO Heated Vests:** Stay cozy this winter - *\$104.99 (38% off!)*
- **Levi's Women's Classic Straight Jeans:** Timeless comfort - *\$45.99 (34% off!)*
- **Koolaburra by UGG Platform Slippers:** Ultimate indoor-outdoor comfort - *\$64.99 (28% off!)*

Exclusive Gift Ideas

- **V for Vendetta Movie Poster (Vintage):** Iconic wall art - *\$19.99 (40% off!)*
- **Joyin Dinosaur Toy Set (13-in-1):** Perfect for kids - *\$29.99 (40% off!)*
- **BlueWood Pikler Triangle Montessori Climber:** Engaging toddler play - *\$149.99 (42% off!)*

Black Friday Blowout Sale: A Once-in-a-Lifetime Opportunity!

Get ready to save BIG this Black Friday with unbeatable discounts on premium products from China! Don't miss your chance to grab these must-haves before prices soar due to upcoming tariffs. This is your moment to shop smart, save more, and stock up on all your favorites at jaw-dropping prices!

Why Shop Now?

- **Impending Tariffs:** Prices for many imported goods will rise soon — don't miss these savings!
- **Limited-Time Offers:** These deals won't last long, and stock is limited.
- **Free Shipping:** On all orders over \$50 — shop more, save more!

Shop with Confidence

Whether you're looking for the perfect gift or a treat for yourself, our Black Friday deals have you covered. **Don't wait!** Prices go back up after this week, and these savings are too good to miss.

Shop Now → [YourWebsiteHere.com](#)

Write something...

圖 12.5 黑色星期五的 AI 優先分析頁面

Figure 12.5 AI-first Analysis page for Black Friday

來源：在 ChatGPT 中使用 AI 生成（在 Greg 的一點幫助下）

Source: Generated with AI in ChatGPT (with a little help from Greg)

雖然 AI

優先分析頁面可能看起來與目前的亞馬遜頁面非常相似，但也有一些顯著差異：

While the AI-first Analysis page might look very similar to the current Amazon page, there are some significant differences:

- LLM 文本摘要：提及這個黑色星期五的獨特性 LLM Text Summary: Mentioning the unique nature of this Black Friday

- 為什麼現在購物：利用人們當前恐懼的購物理由（因為恐懼是賣的！好。非常恰當。Why Shop Now: Reasons to shop that play on people ' s current fears (because fear sells! Nice. Very apropos.)
- 禮品/折扣類別：專門針對熱門禮品和折扣，而不是用戶可能直接感興趣的事物。 Gift/Discount Categories: Specifically targeted at popular gifts and discounts, not at things the user might be directly interested in.

令人印象深刻，不是嗎？這實際上是當今使用 LLM 技術開箱即用的功能。

Impressive, no? This is literally what is accessible today out-of-the-box using the LLM technology.

但是等等，還有更多。哦，是的。太多。更。

But wait, there is more. Oh yes. So. Much. More.

AI 優先類別分析頁面

AI-First Category Analysis Pages

隨著 LLM 的運行，系統現在可以理解和檢測該人感興趣的類別、地點、事物或想法。試試這個小實驗：只需將您過去的 Amazon.com 訂單轉儲到 ChatGPT 中，然後詢問該客戶對哪些類別和消遣感興趣，以及他們接下來可能想購買什麼。我必須承認，即使我的期望相當誇大，現代法學碩士也讓我大吃一驚。ChatGPT 不僅了解類別（釣魚、園藝、運動、狗等），還了解邏輯上遵循的購買項目細節。例如，由於我最近購買了一個新的輕型旋轉捲線器，它從過去的訂單中確定我現在有兩個捲線器，只有一根魚竿，因此我可能會購買另一根魚竿、輕型線和鱒魚誘餌，並為每種魚竿提出了很好的建議，無需任何微調或外部來源的幫助（見圖 12.6）。

With LLMs running, the system can now understand and detect what categories, places, things, or ideas the person is interested in. Try this little experiment: Simply dump your past Amazon.com orders into ChatGPT and ask what categories and pastimes this customer is interested in and what they might want to buy next. I must admit that even with my reasonably inflated expectations, the modern LLMs have simply blown me away. ChatGPT understood not only the categories (fishing, gardening, working out, dog, etc.) but also the item specifics for purchases that logically followed. For example, since I recently bought a new lightweight spinning reel, it determined from past orders that I now have two reels and only one rod, and thus I might be likely buy another rod, lightweight line, and trout lures, and came

up with excellent recommendations for each, without any fine-tuning or help from external sources (see Figure 12.6).

Black Friday | **Fishing** | Gardening | Working out | For your Pooch

Treat Yourself This Black Friday: Ultra-Light Fishing Edition! 🎣

Fishing Rods 🎣

- St. Croix Trout Series Spinning Rod (6' Ultra-Light)**
"Perfect for precision and sensitivity, ideal for trout fishing adventures. Now \$89.99 (30% off!)"
- Ugly Stik Elite Spinning Rod (5'6" Ultra-Light)**
"Durable and ultra-sensitive, a rod you can count on. Just \$39.99 (50% off!)"

Fishing Lines 🎣

- Berkley NanoFil Uni-Filament Fishing Line (2-6lb)**
"Ultra-thin, smooth, and sensitive for effortless casting and strong performance. Only \$12.99 (35% off!)"
- P-Line Floroclear Fluorocarbon Coated Line (4lb, 300 yards)**
"Virtually invisible underwater, perfect for trout in clear waters. Now \$7.99 (40% off!)"

Trout Lures 🎣

- Panther Martin Trout Spinner Pack (5-Pack)**
"Versatile spinners with vibrant colors for irresistible trout appeal. \$14.99 (25% off!)"
- Mepps Aglia Ultra-Light Spinners (3-Pack)**
"Classic and effective, perfect for streams and lakes. Now \$11.99 (30% off!)"
- Trout Magnet Kit (85-Piece Set)**
"A go-to kit with jig heads and bodies for targeting all sizes of trout. Just \$9.99 (40% off!)"

Extra Accessories 🎣

- Plano Waterproof Tackle Box (Small)**
"Keep your lures and tackle safe and dry. Now \$19.99 (33% off!)"
- Rapala 5" Fish'n Fillet Knife with Sheath**
"Perfect for cleaning your fresh catches. Only \$11.99 (45% off!)"

🎁 This Black Friday, treat yourself to the tools that make fishing even more rewarding. Build your dream setup at prices that won't last—cast your savings line before the deals are gone! 🎣

Upgrade your fishing arsenal and turn your next angling adventure into a triumph! You've got the reel—now complete your setup with the perfect ultra-light rod, high-quality line, and irresistible trout lures. Here are the *must-haves* for the ultimate lightweight fishing experience, all at unbeatable Black Friday prices.




圖 12.6 黑色星期五的 AI 優先分析釣魚類別頁面

Figure 12.6 AI-first Analysis Fishing Category page for Black Friday

來源：Midjourney 中用 AI 生成

Source: Generated with AI in Midjourney

關於此頁面的一些注意事項：

Some things to note about this page:

- 類別項目特定的 LLM 摘要：摘要再次位於頁面的右上角。然而，這個特定的摘要更具體地針對我最近的購物和興趣，正如類別頁面所期望的那樣。Category-item-specific LLM Summary: The summary is again on the top right of the page. However, this particular summary is much more specifically targeted to my recent shopping and interests, as is expected of the category page.
- 英雄圖片：這不僅僅是視覺趣味，這張圖像是由 Midjourney 根據頁面內容作為 ChatGPT 的動態提示生成的。這是一個定制的大雜燴，其中包含頁面正文中提到的一些精美產品。（是的，這有點粗糙，但很快就會好轉。Hero Image: So much more than just visual interest, this image is generated by Midjourney as a dynamic prompt from ChatGPT based on the page 's content. It is a custom smorgasbord featuring some of the beautiful products that are mentioned in the body of the page. (Yeah, it 's a bit rough, but that will get better fast.)
- 項目順序：同樣，這是由 ChatGPT 自行選擇的，以反映您現在最可能需要的內容。Order of the Items: Again, that is self-selected by ChatGPT to reflect what you are most likely to need right now.

現在讓我重申一下：

Now let me reiterate:

Midjourney generated the Hero image based on a dynamic prompt from ChatGPT that also created the screen 's content.

這不比一堆物品好一點嗎？你打賭。它告訴您使用物品（而不僅僅是物品本身）捕獲夢想中的魚的冒險經歷。（注意：當然，您還將擁有單獨的圖像。這只是將他們聯繫在一起的英雄形象。

Isn ' t that just a little better than a bunch of items? You bet. It ' s telling you about the adventure of landing the fish of your dreams using the items, not just the items themselves. (NOTE: You also will have the individual images, of course. This is just the Hero image tying them together.)

便條

NOTE

現在，內容是一個故事。它適合在一起。它還會引起情緒反應。這就是我所說的「人工智慧優先設計」的意思。

Now, the content is a story. It fits together. It also elicits an emotional response. This is what I mean by “ AI-first design. ”

這相當於漁民的視覺快克可卡因。我只花了幾分鐘就根據 ChatGPT 的輸出「設計」（更像是「組合」或「編排」）這個頁面。現在想像一下您的用戶真正關心的每個類別，經過仔細分析，突出顯示可能的打折商品，並根據您的興趣和購物習慣專門選擇的定制商品大雜燴。這種個人化完全顛覆了當前的體驗，咳咳，從水中消失。

This is the equivalent of a visual crack cocaine for a fisherfolk. And it took me just minutes to “ design ” (more like “ put together ” or “ orchestrate ”) this page based on the ChatGPT ’ s output. Now imagine each and every category your users really care about, meticulously analyzed, likely items on sale highlighted, with a custom smorgasbord of items specially selected for your interests and shopping habits. The kind of personalization knocks the current experience completely, ahem, out of the water.

便條

NOTE

請注意，我在這裡將「設計」放在引號中，因為這並不是當今大多數人進行使用者體驗設計的方式。這就是當 Figma 最終消亡（或將頭從屁股中拔出）並進入代碼優先設計系統時，我們將要進行的“設計編排”，正如我們在第 19 章“RITE，人工智能研究的基石”中詳細討論的那樣。

Note that I put “ design ” in quotes here, because this is not pixel-pushing the way most folks do UX design today. This is the kind of “ design orchestration ” we are going to be doing when Figma finally dies off (or pulls its head out of its arse) and gets to code-first design systems, as we discuss at length in Chapter 19, “ RITE, the Cornerstone of Your AI Research. ”

然後，繼續前進。

Right then, moving on.

AI 優先的 LLM 搜尋

AI-First LLM Search

我們已經在本書前面介紹過這一點，但值得重複一遍：LLM 可以輕鬆解決需要複雜推理的 NLP 查詢，例如「不可怕的謎團」（見圖 12.7）。

We have already covered this earlier in the book, but it bears repeating: LLMs can easily solve for NLP queries that require complex reasoning, such as “Mysteries That Are Not Scary” (see Figure 12.7).

amazon prime Deliver to Greg All mysteries that are not scary EN Hello, Greg Account & Lists Returns & Orders Cart

Black Friday Deals Medical Care Prime Video Amazon Basics Buy Again Amazon Home Groceries Pharmacy Household, Health & Baby Care Amazon Business Shop Black Friday Week

1-16 of 106 results for "mysteries that are not scary" Enjoy these intriguing tales that promise suspenseful fun without sleepless nights! Sort by: Featured

Delivery

All Prime

Kindle Unlimited

kindleunlimited

Department

Books

- Children's Mystery, Detective, & Spy
- Children's Literature
- Mysteries

Kindle Store

- Kindle eBooks
- Movies & TV
- Prime Video
- Movies & Films
- TV Shows

Customer Reviews

★★★★★ & Up

Condition

Collectible

New

Used

Book Format

Paperback

Kindle Edition

Book Language

English

Series Status

In a Series

Not in a Series

- 1. The No. 1 Ladies' Detective Agency**

 - Type: Book
 - Scariness Score: 1/10
 - Plot: Precious Ramotswe opens Botswana's first female-run detective agency, solving charming and heartfelt mysteries in her community.
 - Price: \$9.99
 - Discount: 20% off
- 2. Knives Out**

 - Type: Movie
 - Scariness Score: 2/10
 - Plot: A clever and humorous murder mystery unfolds as Detective Benoit Blanc investigates the dysfunctional Thrombey family.
 - Price: \$12.99
 - Discount: 15% off
- 3. The Sweetness at the Bottom of the Pie**

 - Type: Book
 - Scariness Score: 2/10
 - Plot: Flavia de Luce, an 11-year-old amateur sleuth with a love for chemistry, solves a local mystery involving a rare stamp.
 - Price: \$8.99
 - Discount: 25% off
- 4. Enola Holmes**

 - Type: Movie
 - Scariness Score: 2/10
 - Plot: When her mother disappears, young Enola Holmes sets out to solve the case, uncovering secrets and challenging societal norms along the way.
 - Price: \$14.99
 - Discount: 10% off
- 5. The Thursday Murder Club**

 - Type: Book
 - Scariness Score: 1/10
 - Plot: A group of elderly friends in a retirement village investigate a real-life murder with wit and determination.
 - Price: \$13.99
 - Discount: 30% off
- 6. Clue**

 - Type: Movie
 - Scariness Score: 3/10
 - Plot: Based on the classic board game, this comedic mystery follows colorful characters solving a murder in a mansion, with plenty of laughs and twists.
 - Price: \$9.99
 - Discount: 20% off

Summary: Discover an array of engaging, non-frightening mysteries perfect for curious minds of all ages! These captivating tales blend intriguing puzzles and clever resolutions without the heart-stopping scares. From lighthearted whodunits to imaginative adventures, these picks are perfect for readers and viewers who prefer excitement over fear. Check out these highly-rated options, complete with discounts!




圖 12.7 「不可怕的謎團」的 AI 優先 LLM 搜尋結果頁面

Figure 12.7 AI-first LLM Search Results page for “Mysteries That Are Not Scary”

來源：Midjourney 中用 AI 生成

Source: Generated with AI in Midjourney

想像一下添加項目圖像，您就會在那裡。

Just imagine adding the item images, and you will be there.

以下是有關此頁面的幾點注意事項：

Here are a few things to note about this page:

- 機器對查詢的解釋：“享受這些有趣的故事，保證帶來懸疑的樂趣，而不會不眠之夜！（在頁面頂部）。它既有趣又精確。它以自然語言捕捉了您所要求的精神。今天（目前）還沒有電子商務網站這樣做。回想一下，我們在第9章「LLM設計模式」中介紹了重述和其他基於文字的 Copilot 設計模式。Machine Interpretation of the Query: “Enjoy these intriguing tales that promise suspenseful fun without sleepless nights!” (at the top of the page). It is playful and precise. It captures the spirit of what you are asking for in a natural language. No e-commerce site does this today (yet). Recall that we covered Restating and other Copilot text-based design patterns in Chapter 9, “LLM Design Patterns.”
- 特定結果的法學碩士摘要：這個摘要更加引人注目，因為它本質上是使用解釋即時建構的。Result-specific LLM Summary: This summary is even more remarkable because it’s essentially constructed on the fly using the interpretation.
- 卓越的結果：檢查。Exceptional Results: Check.
- 「恐怖程度評等」：一種自訂指標，與項目摘要（明確創建以幫助用戶解釋其 NLP 查詢的結果）一起，幫助用戶評估項目的用途是否適合，並將他們甚至不知道自己想要的確切項目歸零。“Scariness Rating” : A custom metric that, together with the item summary (explicitly created to help the user interpret the results of their NLP query), helps the user evaluate the item’s fitness of purpose and zero in on the exact item they did not even know they wanted.
- 保留的方面：沒有理由僅僅因為它與傳統搜索結果的溫水混合在一起就把老嬰兒扔到頭上。Facet 非常有益，並且經常被許多搜索者使用。沒有理由因為我們正在使用 LLM，因此需要省略它們——事實上，LLM 可以動態增強方面本身，以包含上述“可怕程度評級”和其他自定義指標，視情況而定。它們可以包含更豐富的多面向子集，不僅取決於項目元數據，還取決於查詢本身——一種全新的搜索檢測功能！Facets Preserved: No reason to drop the old baby on its head just because it’s mixed together with the tepid bathwater of conventional search results. Facets are highly beneficial and are frequently

used by many searchers. There is no reason they need to be omitted because we are using the LLM—in fact, the facets themselves can be augmented dynamically by the LLM to include the said “ Scariness rating ” and other custom metrics, as appropriate. They can include a much richer subset of facets dependent not only on the item metadata but also on the query itself—a brand-new search instrumentation capability!

- 自訂圖像：同樣，這裡我們有一個使用 ChatGPT 的摘要提示建立的 Midjourney 產生的自訂圖像。 Custom Imagery: Again, here we have a Midjourney-generated custom image built using a summary prompt from ChatGPT.

簡而言之，這些 LLM 產生的結果不僅在內容上更優越（無需任何額外的輸入或微調），而且在體驗上也更勝一籌。這個 AI 優先的搜尋結果頁面努力在客戶問題的背景下游述故事。人工智慧正在使用客戶的語言與客戶交談。它不僅易於訪問，而且易於訪問。它是個人化的（請參閱本章後面的 Jakob Nielsen 對個人化使用者體驗的看法和 Josh Clark 的感知設計和智慧介面觀點）。人工智慧提供適合其理解客戶試圖解決的任務的解釋、評級和過濾器。

In short, these LLM-produced results are not just superior in content (with no additional input or fine-tuning whatsoever) but also superior in experience. This AI-first search results page makes an effort to tell the story—in the context of the customer ’ s question. AI is talking with the customer using their language. It ’ s not just accessible; it ’ s individualized (see Jakob Nielsen ’ s perspective on individualized UX and Josh Clark ’ s Sentient Design and the Intelligent Interface perspective later in this chapter). AI offers explanations, ratings, and filters appropriate to the task it understands the customer is trying to solve.

需要多層次對話和特定改進的任務相關查詢，例如“我的巴塔哥尼亞之旅可能需要哪些物品？歡迎來到下一個級別！

Task-related queries that require multilevel conversations and specific refinements, such as “ What items will I be likely needing for my Patagonia trip? ” or “ I need a door gasket that fits my classic Jaguar, ” should also be no problem. Welcome to the next level!

AI 優先項目詳情

AI-First Item Detail

忘記傳統的項目詳細信息，其中每個部分（問答、詳細信息、評論）都需要使用自己的搜索框進行搜索。在新的 AI 優先範式中，我們可以使用螢幕頂部的「詢問欄」創建簡單的一體化搜尋和問答體驗，該體驗已使用可編輯/可移除的橙色標籤代替通常的類別下拉式清單，該選項已與該特定項目進行上下文化（見圖 12.8）。

Forget the conventional item details, where each section (Q&A, Details, Reviews) needs to be searched using its own search box. In the new AI-first paradigm, we can create a simple all-in-one search and Q&A experience using the “ask bar” on top of the screen that has been contextualized to this specific item using an editable/removable orange tag in place of the usual category drop-down (see Figure 12.8).

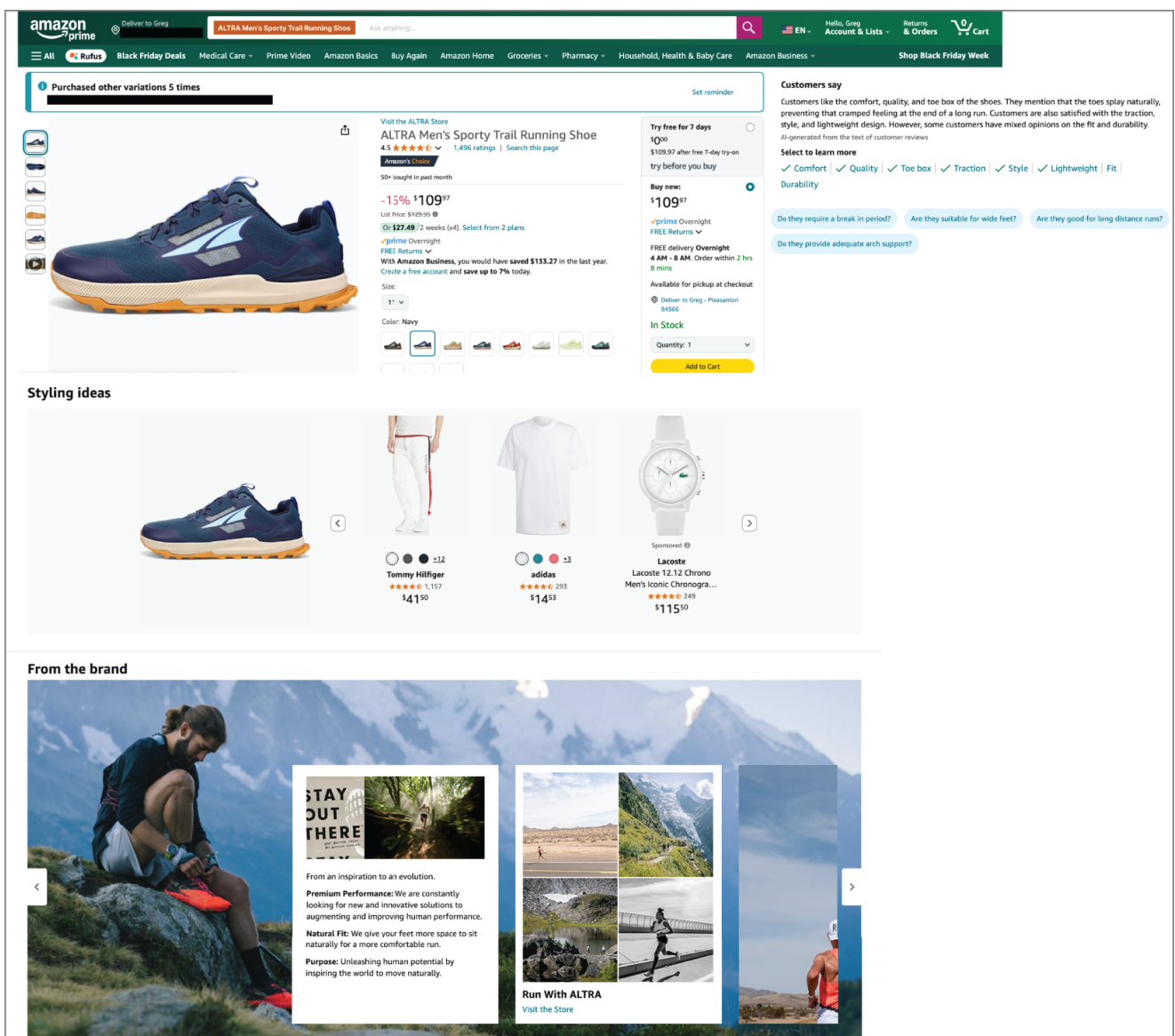


圖 12.8 AI 優先的項目詳細資料頁面

Figure 12.8 AI-first Item Detail page

資料來源：Greg Nudelman 和 Amazon.com

Source: Greg Nudelman and Amazon.com

關於此頁面的注意事項：

Things to note about this page:

- 情境化、一體化問答和搜尋：忘記多個搜尋框的舊式！現在搜索/詢問已與該項目相關，頂部欄可以完成您需要的一切，包括回答有關項目細節的問題以及推測（甚至直觀地演示）該項目如何適合您積極的生活方式。（需要搜索其他東西嗎？只需刪除橙色標籤即可。想要詢問有關最近查看的其他項目的問題嗎？單擊橙色標籤進行更改，並讓 LLM 建議要歸零的替代項目列表。 Contextualized, All-in-one Q&A and Search: Forget the ye olde paradigm of multiple search boxes! Now that the search/ask has been contextualized to this item, the top bar does everything you need, including answering questions about item specifics and speculating (or even visually demonstrating!) how the item would fit into your active lifestyle. (Need to search for something else? Just delete the orange tag. Want to ask a question about a different recently viewed item? Click on the orange tag to change it and have the LLM suggest a list of alternative items to zero in on.)
- 特定於專案、特定於使用者的 LLM 摘要：此頁面也有文字摘要，但此摘要是特定於專案的，而且最好透過預測此特定使用者可能想要提出的問題來建立。您的使用者是否有寬腳、旋前或足底筋膜炎？摘要將討論與使用者的關注點相關的項目。 Item-specific , User-specific LLM Summary: This page also has a text summary, but this one is specific to the item and also ideally created by anticipating the questions this specific user is likely to want to ask. Does your user have wide feet, pronation, or plantar fasciitis? The summary will talk about the item as it relates to the user ' s concerns.
- 使用者特定的後續步驟問題：請注意摘要下方的標籤;這些是摘要中未包含的其他問題，它們結合了用戶接下來可能想問的問題以及其他與他們類似的用戶在看到摘要後接下來問的問題，以及通常的 DOI “ AI 智能 ”。這是一個強大的組合，將形成新競爭格局的 “ 秘密武器 ”。（參見第 11 章， “ AI 搜索第 2 部分：'眼肉'和 DOI 排序算法。 User-specific Next Steps Questions: Note the tags below the summary; these are additional questions not included in the summary that are a combination of what the user might want to ask next and also what other users similar

to them have asked next after seeing the summary, plus the usual DOI “ AI smarts. ” It ’ s a powerful combination that will form the “ secret sauce ” of the new competitive landscape. (See Chapter 11, “ AI-Search Part 2: ‘ Eye Meat ’ and DOI Sort Algorithms. ”)

- 用戶特定的圖像：也許將該物品與用戶之前購買的物品一起展示？（不是這張圖片——我不買白衣服。曾。時。白色手錶？認真的？呃。即使它有 Helvetica 字體。 User-specific Imagery: Maybe feature the item together with things the user purchased previously? (Not this image—I do not buy white clothes. EVER. Period. White watch? Seriously? Ugh. Not even if it has Helvetica font.)
- 特定於用戶興趣的圖像：也許展示一個有點怪異（但好看！）的鬍子刮得乾乾淨淨的傢伙穿著新鞋釣魚？（再說一遍，不是這個特定的圖像——我不在小徑上跑步。我徒步旅行。這要有尊嚴得多。 User-interest-specific Imagery: Maybe show a slightly geeky (but good-looking!) clean-shaven guy doing some fishing, wearing the new shoes? (Again, not this specific image—I do not run on trails. I hike. It ’ s much more dignified.)

關鍵是，這個摘要再次講述了一個關於該項目如何與用戶相關的引人入勝的故事——這就是人工智慧優先的含義。

The point is that this summary again tells a compelling story about how the item relates to the user—this is what it means to be AI-first.

注意：這也可能導致一些非常愚蠢和錯誤的組合——例如，如果一個對 DIY 項目不感興趣的配偶為他們的伴侶購買了很多電動工具。另一方面，這可能非常有趣——用戶可能會讓人工智慧不斷產生幻覺，只是為了娛樂！好吧，好吧，我們在開玩笑！實際上，已經有一種簡單且被廣泛接受的方法來解決這個問題：只需避免所有與人工智慧相關的猜測廢話，並允許用戶自己選擇他們要購買的人的個人資料，就像 Netflix 或 Amazon Prime 對電影選擇所做的那樣.....因為並不是所有事情都需要用人工智慧來完成！（見圖 12.9）。

NOTE: This could also cause some very silly and mistaken combinations—for example, if a spouse who has no interest in DIY projects buys a lot of power tools for their partner. On the other hand, this could be quite entertaining—users might let AI keep hallucinating weird activities just for the entertainment! Okay, okay, we ’ re kidding! Actually there already is a straightforward and well-accepted way to solve this problem: Simply avoid all the AI-related guessing nonsense and allow the user themselves to pick the profile of who they are shopping for, just as Netflix or Amazon Prime does with movie picks ... because not everything needs to be done with AI! (See Figure 12.9).

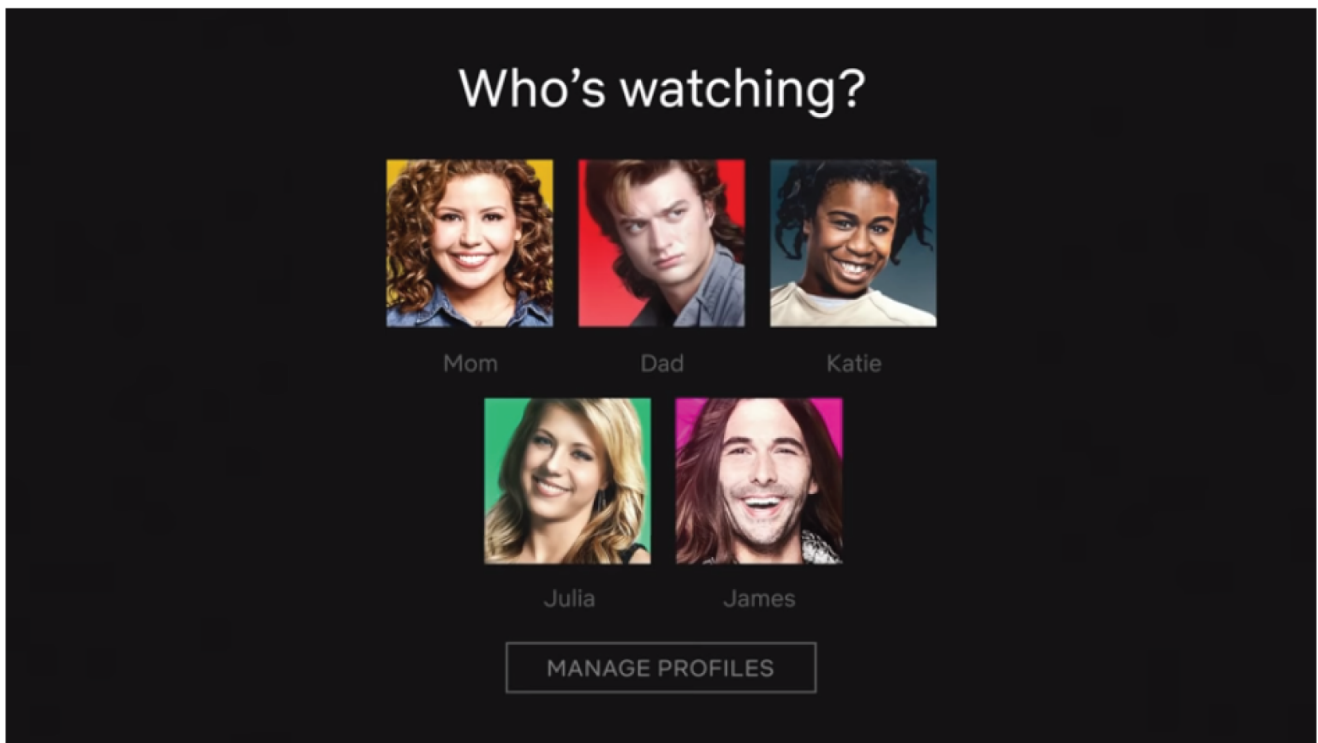


圖 12.9 並非所有東西都需要是人工智慧

Figure 12.9 Not everything needs to be AI

資料來源：Netflix, Inc. / <https://variety.com/2018/digital/news/netflix-launches-new-way-to-promote-originals-your-profile-icon-1202883847/> 最後訪問日期為 2025 年 1 月 5 日

Source: Netflix, Inc. / <https://variety.com/2018/digital/news/netflix-launches-new-way-to-promote-originals-your-profile-icon-1202883847/> last accessed on January 05, 2025

(有關解決棘手問題的這種技術和其他巧妙的非人工智慧驅動技術的更多討論，請參閱 David Andrzejewski 在第 2 章「選擇正確用例的重要性」中的側邊欄。

(For more discussion on this and other clever non-AI-driven techniques for solving tough problems, see David Andrzejewski's sidebar in Chapter 2, "The Importance of Picking the Right Use Case.")

AI 優先維護頁面

AI-First Maintenance Pages

LLM 的魔力也可以應用於維護頁面。設定頁面可以在設定中提供持續的人工智慧驅動指導和故障排除，例如驗證送貨地址和確定過期信用卡的日期。他們基本上也可以成為獨立的 AI 代理，可以使用自然語言回答簡單的戰術問題並解決日常任務，例如，回答與訂單相關的問題，例如：

The magic of LLMs can also apply to maintenance pages. Settings pages can provide ongoing AI-driven guidance and troubleshooting in setup, such as validating the delivery addresses and fixing dates for expired credit cards. They can also essentially become independent AI agents that can answer simple tactical questions and solve everyday tasks using natural language—for instance, answering order-related questions such as the following:

- “ 我的訂單什麼時候到？ ” “ When will my order arrive? ”
- 「 『處理中』 或 『已發貨』 是什麼意思？ 」 “ What does ‘ Processing ’ or ‘ Shipped ’ mean? ”
- 「 我可以更改或取消訂單嗎？ 」 “ Can I change or cancel my order? ”
- 「 如何退回商品？ 」 “ How do I return an item? ”
- 「 我什麼時候可以收到退款？ 」 “ When will I receive my refund? ”

可以以對話式問答形式提出和回答更多問題，這是新法學碩士的生計。到目前為止，您可能可以填寫其餘內容：與訂單相關的法學碩士摘要、一份迷你報告，其中包含有關大量購買必需品和省錢的想法（當然，同時，花費更多……很多很多，更多。哇哈哈！

Many more questions can be asked and answered in a conversational Q&A format—the new LLMs ’ bread and butter. By now, you can probably fill in the rest: an LLM summary relating to orders, a mini-report full of ideas about shopping for necessities in bulk and saving money (while, of course, spending more ... much, much, MUCH more. Bwahahaha!)

資訊架構萬歲！

Long Live Information Architecture!

我們今天介紹的所有內容現在都可以輕鬆直接訪問。它所需要的只是有人構思這些新體驗並想出簡單的線框圖。（嗯，這實際上正迅速成為簡單的部分——說服領導層優先考慮這些新型體驗，並投資於技術堆棧，讓他們真正唱歌……同時拋棄傳統設計。這是現在最困難

的部分！不過，我希望本章能幫助您了解 IA 的基礎知識，以了解一款可以被視為「人工智慧優先」的應用程式。

Everything we 've covered today is easily and directly accessible right now. All it requires is someone to dream up these new experiences and come up with simple wireframes. (Well, that 's actually fast becoming the easy part—convincing the leadership to prioritize these new types of experiences and invest in the tech stack that will make them truly sing ... while discarding the conventional designs. That is now the hard part!) However, I hope that this chapter helped you a little with the basics of IA for an app that can be considered “ AI-first. ”

但讓我再次警告：請不要只是複製這些想法；相反，請將它們用作您自己的應用程式的靈感，以解決您獨特客戶的用例。花時間了解上下文故事講述、類別、概念和想法的識別、上下文摘要、聯合對話搜索、限制搜索和後續步驟的重要性——所有這些都使這個信息架構框架成為一種新的人工智慧優先用戶體驗遊戲。

But let me caution once again: Please do not merely copy these ideas; instead, use them as inspiration for your own app to solve your unique customers ' use cases. Take the time to understand the importance of contextual storytelling, identification of categories, concepts, and ideas, contextual summaries, federated conversational search, constrained search, and Next Steps—all that makes this Information Architecture framework work as a new AI-first UX play.

最重要的是，嘗試看看這個新框架如何提供卓越的體驗：

Most importantly, try to see how this new framework delivers a superior experience:

便條

NOTE

人工智慧優先的應用程序努力在客戶需求的背景下講述故事。AI 使用客戶的語言與客戶交談。所有內容都是高度個性化的。人工智慧提供適合其理解客戶試圖解決的任務的解釋、評級和過濾器。

The AI-first application makes an effort to tell the story in the context of the customer 's needs. AI talks with the customer using their language. All of the content is highly individualized. AI offers explanations, ratings, and filters appropriate to the task it understands the customer is trying to solve.

我們在這裡討論的內容並不意味著放棄在傳統應用的 IA 中收集的智慧和洞察力。這意味著以一種新的人工智慧優先方式思考這些舊見解。IA 萬歲！

None of what we discussed here means discarding the wisdom and insight collected in the IA of conventional applications. It means thinking about those old insights in a new AI-first way. Long live IA!

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視角 : 生成式 UI = 個人化使用者體驗

PERSPECTIVE: GENERATIVE UI = INDIVIDUALIZED UX

雅各布 · 尼爾森 (Jakob Nielsen)

By Jakob Nielsen

「生成式 UI」簡單來說就是應用人工智慧自動產生使用者介面設計，利用演算法可以根據指定的參數或資料輸入產生各種設計。目前，這通常是在使用者體驗設計過程的早期階段完成的，人類設計師在將人工智慧產生的 UI 草稿融入傳統應用程式之前進一步完善它。在此方法中，所有使用者都會看到相同的 UI，而且每次存取應用程式時 UI 都是相同的。使用者體驗可能會在小程度上個人化，但目前的工作流程假設 UI 在人類設計師簽核時基本上已凍結。我建議將第一代生成式 UI 一詞用於凍結設計，其中 AI 僅在出貨前修改 UI。

“ Generative UI ” is simply the application of artificial intelligence to automatically generate user interface designs, leveraging algorithms that can produce a variety of designs based on specified parameters or data inputs. Currently, this is usually done during the early stages of the UX design process, and a human designer further refines the AI-generated draft UI before it is baked into a traditional application. In this approach, all users see the same UI, and the UI is the same each time the app is accessed. The user experience may be individualized to a small extent, but the current workflow assumes that the UI is basically frozen at the time the human designer signs off on it. I suggest the term first-generation generative UI for frozen designs where the AI only modifies the UI before shipping the product.

我預計一種更激進的生成式 UI

方法很快就會出現——也許在五年左右。在這個第二代生成式 UI 中，每次使用者存取應用程式時，都會重新產生使用者介面。最重要的是，這意味著不同的用戶將獲得截然不同的設計。這就是我們真正幫助殘疾用戶的方式。然而，新生成的 UI 也意味著隨著用戶對系統的了解更多，體驗將適應他們。例如，可以向初學者展示更簡化的體驗，並為專家用戶引入高級功能。

I foresee a much more radical approach to generative UI to emerge shortly—maybe in five years or so. In this second-generation generative UI, the user interface is generated afresh every time the user accesses the app. Most important, this means that different users will get drastically different designs. This is how we genuinely help disabled users. However, freshly generated UIs also mean that the experience will adapt to the user as they learn more about the system. For example, a more simplified experience can be shown to beginners, and advanced features can be introduced for expert users.

轉向第二代生成式 UI 將徹底改變 UX

專業人員的工作。我們將不再設計使用者將看到的確切使用者介面，因為每個使用者的 UI 都會有所不同，並且會在執行階段產生。相反，UX 設計師將指定 AI 用於生成 UI 的規則和啟發式方法。

Moving to second-generation generative UI will revolutionize the work of UX professionals. We will no longer be designing the exact user interface that our users will see since the UI will be different for each user and will be generated at runtime. Instead, UX designers will specify the rules and heuristics the AI uses to generate the UI.

不要驚慌。

Don ' t panic.

雖然成倍放大，但生成式 UI 固有的精確設計者控制的喪失與響應式網頁設計引入的變化非常相似。在響應式設計之前，許多網頁設計師的目標是對他們的創作進行像素完美的控制。然而，對於響應式設計，這變得不可能，因為設計元素會在螢幕上移動（有時出現或消失），具體取決於每個使用者的視口大小。

While exponentially magnified, the loss of exact designer control inherent in generative UI is very similar to the change introduced by responsive web design. Before responsive design, many web designers aimed at pixel-perfect control over their creations. However, with responsive design, this became impossible because design elements would move around the screen (and sometimes appear or disappear), depending on each user ' s viewport size.

傳統上，電腦製作單一圖形使用者介面（GUI）來表示底層功能和資料。視力正常的用戶只需直接使用此 GUI。盲人使用者會先使用螢幕閱讀器將 GUI 線性化並將其轉換為文字。然後，這些單詞流將被大聲說出來供用戶聆聽。這種間接顯然會產生糟糕的用戶體驗：通過 2D，視力正常的用戶可以直觀地掃描整個螢幕並挑選出感興趣的元素。相比之下，盲人用戶被迫聽完所有內容，除非他們使用某種功能來跳過（從而完全錯過）某些部分。

Traditionally, the computer made a single graphical user interface (GUI) to represent the underlying features and data. A sighted user would simply use this GUI directly. A blind user would first employ a screen reader to linearize the GUI and transform it into words. This stream of words would then be spoken aloud for the user to listen to. This indirection clearly produces a terrible user experience: With 2D, the sighted user can visually scan the entire screen and pick out elements of interest. In contrast, the blind user is forced to listen through everything unless they employ a feature to skip over (and thus completely miss) some parts.

透過生成式 UI，AI 可以存取基礎資料和功能，並將其轉換為針對個別使用者最佳化的使用者介面。對於視力正常的用戶來說，這可能是 GUI，而對於盲人用戶來說，這將是一個聽覺用戶界面。視力正常的使用者可能會獲得與先前相似的使用者介面，但生成式使用者介面將針對該使用者進行閱讀程度和其他需求的最佳化。對於盲人使用者，生成式 UI 會略過 2D 版面配置中資料和特徵的表示，而這些配置在線性呈現時永遠不會是最佳的。

With generative UI, an AI accesses the underlying data and features and transforms them into a user interface that ' s optimized for the individual user. This will likely be a GUI for a sighted user, and for a

blind user, this will be an auditory user interface. Sighted users may get UIs that look similar to what they previously had, though the generative UI will be optimized for this user with respect to reading levels and other needs. For the blind user, the generative UI bypasses the representation of data and features in a 2D layout that will never be optimal when presented linearly.

除了為盲人使用者建立最佳化的一維表示之外，生成式 UI 還可以透過其他方式最佳化使用者體驗。由於聆聽速度比目視掃描文字慢，因此可以生成更簡潔的盲人版本。此外，文本可以根據每個用戶的閱讀水平進行調整，確保每個人都能輕鬆理解。

Besides creating optimized one-dimensional representations for blind users, generative UI can also optimize the user experience in other ways. Since it is slower to listen than to visually scan text, the version for blind users can be generated to be more concise. Furthermore, text can be adjusted to each user ' s reading level, ensuring easy comprehension for everybody.

關於雅各布·尼爾森

About Jakob Nielsen

Jakob Nielsen 博士是可用性先驅，在使用者體驗領域擁有 41 年的經驗。他是 UX Tigers 的創始人，並創立了折扣可用性運動，用於快速和廉價的迭代設計，包括啟發式評估和 10 個可用性啟發式。他制定了同名的雅各布互聯網用戶體驗定律。他是 8 本書的作者，並擁有 79 項美國專利，主要是讓互聯網更易於使用。訂閱 Jakob 的電子報
<https://jakobnielsenphd.substack.com>。

Jakob Nielsen, PhD, is a usability pioneer with 41 years of experience in UX. He is the founder of UX Tigers, and he founded the discount usability movement for fast and cheap iterative design, including heuristic evaluation and the 10 usability heuristics. He formulated the eponymous Jakob ' s Law of the Internet User Experience. He is the author of 8 books and holds 79 U.S. patents, mainly on making the Internet easier to use. Subscribe to Jakob ' s newsletter at
<https://jakobnielsenphd.substack.com>.

視角：感知設計與智慧介面

PERSPECTIVE: SENTIENT DESIGN AND THE INTELLIGENT INTERFACE

作者：喬什·克拉克

By Josh Clark

不要將人工智慧視為一種工具、一種功能，甚至是一種使能技術。相反，將其視為一種材料。當您將智慧融入數位介面的結構中時，會發生什麼？

Don't think of AI as a tool, or a function, or even as an enabling technology. Instead, think of it as a material. What becomes possible when you weave intelligence into the fabric of a digital interface?

感知設計是智能界面的未來：在響應用戶需求時感覺幾乎是自我意識的體驗。感知設計超越了靜態呈現，將使用者體驗轉變為一個完全適應性的故事。這些人工智慧介導的體驗是根據您當下的意圖即時構思和編譯的。它們是適應人們的體驗，而不是強迫相反的體驗。

Sentient design is the already-here future of intelligent interfaces: experiences that feel almost self-aware in their response to user needs. Sentient design moves past static presentation to transform the user experience into a radically adaptive story. These AI-mediated experiences are conceived and compiled in real time based on your intent in the moment. They are experiences that adapt to people instead of forcing the reverse.

對於所有有感知力的設計體驗來說，最重要的是它們既具有意識又具有根本的適應性。人工智能驅動的聊天機器人和助手引入了（但幾乎不完整）這個概念；它們允許您向任何方向進行對話，充滿左轉和不合時宜的情況。這是一種跟隨你去哪裡的體驗——從根本上適應你設定的道路。這種交流不僅屈服於當下的突發奇想，而且是為那一刻而發明的。

What's essential to all sentient design experiences is that they are both aware and radically adaptive. AI-powered chatbots and assistants introduce (but hardly complete) the concept; they allow you to take conversations in any direction, full of left turns and nonsequiturs. It's an experience that follows you where you take it—radically adaptive to the path you set. The exchange not only bends to the whims of the moment, it's invented for that moment.

現在想想超越聊天。網站界面可以以相同的方式生成，在您探索它們時發明它們。在 Salesforce，情境感知儀表板會根據即時需求變更版面配置、內容和互動。更進一步，人工智慧可以將空白畫布變成您當下需要或想要的介面或應用程式。您可以在 Apple 的 Math Notes 等地方看到它發生，它可以讓您為當前需要的任何基於計算器的應用程序潦草地繪製界面。Claude 的 Artifact 功能可讓您描述一個簡單的應用程式（「我想玩 Asteroids！給我做一個遊戲」）並開始實時使用它。（應用程式探索過去依賴搜尋或策展，現在您可以顯示您需要的內

容，有時甚至不需要要求。

Now think beyond chat. Website interfaces can be generated in the same way, invented as you explore them. At Salesforce, context-aware dashboards change layout, content, and interaction according to immediate need. Taking it even further, AI can turn a blank canvas into exactly the interface or application you need or want in the moment. You can see it happening in places like Apple ' s Math Notes, which lets you scrawl the interface for whatever calculator-based app you need in the moment. Claude ' s Artifact feature lets you describe a simple application (“ I want to play Asteroids! Make me a game ”) and start using it in real time. (Application discovery used to rely on search or curation; now you can manifest what you need, sometimes without even asking for it.)

所有這些都是完全適應性的體驗，而且它們已經存在。在這種新型的人工智慧介導體驗中，內容、格式、互動表面、溝通媒介、語氣和美學——甚至是系統的目標——都可以在與其所服務的人進行新的、靈活的協作中發生變化和適應。

All of these are radically adaptive experiences, and they are already here. In this new kind of AI-mediated experience, the content, the format, the interaction surface, the communication medium, the tone and aesthetic—even the very goals of the system—can shift and adapt in a new and nimble collaboration with the people it serves.

這不再是你們的舊網站了。需要新的視角和技術來實現機會並想像這些新的互動。這就是為什麼有感知的設計不僅描述了這種新體驗的形式，還描述了應用它的有意框架和務實的哲學。隨著介面變得更加謹慎，設計師也必須如此。

This isn ' t ye olde website anymore. It takes a new perspective and technique to realize the opportunities and imagine these new interactions. That ' s why sentient design describes not only the form of this new experience but also an intentional framework and pragmatic philosophy for applying it. As interfaces become more mindful, so must designers.

有感知的設計是關於人工智能的.....但也不是。雖然機器智慧提供了使能技術，但目標不是「製造人工智慧產品」。感知設計讓我們能夠以迄今為止不可能的方式提供有意義的人類成果。預期結果本身可能不會改變——我們的創作應該繼續專注於人類目標——但有知覺的設計會破壞人們實現這些結果所需的努力，甚至可能使某些結果首次變得合理、負擔得起或有吸引力。

Sentient design is about AI ... but also not. While machine intelligence provides the enabling technology, the goal is not to “ make AI products. ” Sentient design lets us deliver meaningful human

outcomes in ways that haven't been possible until now. The intended outcomes themselves may not change—our creations should remain focused on human goals—but sentient design collapses the effort it takes for people to realize those outcomes and may even make some outcomes plausible, affordable, or attractive for the first time.

關於喬什·克拉克

About Josh Clark

Josh Clark 和 Veronika Kindred 是《Sentient Design》一書的作者，該書為創建 AI 介導的、完全適應性的體驗提供了框架和視角。他們為數位機構 Big Medium (<https://bigmedium.com>) 的客戶創建智慧介面和智慧設計。

Josh Clark and Veronika Kindred are authors of the book Sentient Design, which provides the framework and perspective for creating AI-mediated, radically adaptive experiences. They create intelligent interfaces and smart designs for their clients at digital agency Big Medium (<https://bigmedium.com>).

便條

NOTE

接下來的兩章重點介紹預測和異常檢測，它們在數學上有些繁重，並且與我們迄今為止在書中討論的 LLM 設計模式背道而馳。如果數學和數據可視化不是您的強項，請隨時跳到重點介紹 AI 代理的第 15 章，並在需要時返回本材料。

The next two chapters focus on forecasting and anomaly detection, which are somewhat heavy in math and are a departure from the LLM design patterns that we have been discussing in the book so far. If math and data visualization is not your strong suit, feel free to skip ahead to Chapter 15 which focuses on AI Agents, and come back to this material when you need it.