

# 第17章CHAPTER 17新常態：以人工智慧為中心的以使用者為中心的設計流程The New Normal: AI-Inclusive User-Centered Design Process

人工智慧是我們以前從未做過的。它需要快速、靈活、以使用者為中心的思維和快速調整的新水平——一個不斷提升人工智慧驅動設計的三大支柱：使用者介面、人工智慧模型和資料的新流程。在本章中，我回顧了新流程，並提出了一個方便的新設計流程圖，您可以在與團隊合作時參考。

AI is like nothing we ' ve ever done before. It demands a new level of rapid, flexible, user-centered thinking and rapid adjustment—a new process that continuously up-levels the three pillars of AI-driven designs: user interface, AI model, and data. In this chapter, I review the new process and present a handy new design process diagram you can refer to in your own work with your team.

## 一開始.....

### In the Beginning ...

許多年前，UX 專業人士使用線性流程圖讓客戶對混亂的 UX 設計過程更加滿意。因此，像圖 17.1 中所示的早期 UX 流程圖顯示了從定義到構思、原型設計、測試和發布的整齊的價值進展。

Many years ago, UX professionals used linear process diagrams to make clients more comfortable with the messy UX design process. Thus, early UX process diagrams like the one in Figure 17.1 show neat value progression from definition to ideation, prototyping, testing, and release.

好主意。可惜這或多或少完全是胡說八道。

Neat idea. Too bad that ' s more or less complete bullshit.

如果我們對自己誠實，「真正的」使用者體驗過程是混亂的。這就像圖 17.2 中的圖表「整齊地」捕捉到的那條錯綜複雜的線：它從想法和金錢開始，使用者體驗人員做事，然後是設計。

If we are honest with ourselves, the “ real ” UX process is messy. It is like the convoluted line “ neatly ” captured by the diagram in Figure 17.2: It starts with Idea and Money, UX People Do Stuff, and Design follows.

當然，除非你是設計師，否則中間的「創意混亂」可能會非常令人生畏。因此，我們傾向於製作更簡單的「混亂」版本，例如這張圖（圖 17.3），描述了我最喜歡的使用者體驗設計技術之一的循環性質：RITE（快速迭代測試和評估），我將在第 19 章「RITE，人工智慧研究的基石」中討論。

Of course, unless you 're a designer, that “ creative mess ” in the middle can be seriously intimidating. So we tend to make simpler versions of “ the mess ” such as this diagram (Figure 17.3) describing the cyclical nature of one of my favorite UX design techniques: RITE (Rapid Iterative Testing and Evaluation), which I will discuss in Chapter 19, “ RITE, The Cornerstone of Your AI Research. ”

然而，越來越多的此類圖表似乎無法捕捉設計人工智慧驅動的產品和功能的現實。問題是，它們都代表了一種對使用者體驗工作的思考方式，這種方式讓人回想起工業時代，當時「創意人員」與「實施人員」以及客戶分開。直到最近，即使在敏捷團隊中，使用者體驗也可以專注於使用者體驗，並將實施留給開發人員。此外，雲計算等技術使我們不必關心某些東西在後端的運行方式，只要有辦法實現該功能，並且成本仍然合理。使用者體驗者大多可以專注於設計，並將實施留給開發人員。（有關這方面的更多信息，請參閱本章末尾 Mike Oren 博士的觀點，“設計 AI 體驗：挑戰、策略和用戶體驗設計師的不斷發展的角色”。

However, more and more, these types of diagrams do not seem to capture the reality of designing AI-driven products and features. The problem is that they all represent a way of thinking about UX work that harkens back to the industrial age where “ idea people ” were separated from “ implementation people ” and from customers. Until recently, even on agile teams, UX had the luxury of focusing on the UX and leaving implementation to developers. Additionally, technologies like cloud computing have insulated us from caring about how something runs on the back end, as long as there was a way to implement the functionality, and cost remained somewhat reasonable. UXers mostly had the luxury of focusing on the design and leaving the implementation to the developers. (For more on this see Dr. Mike Oren 's perspective, “ Designing AI Experiences: Challenges, Strategies, and the Evolving Role of UX Designers, ” at the end of this chapter.)

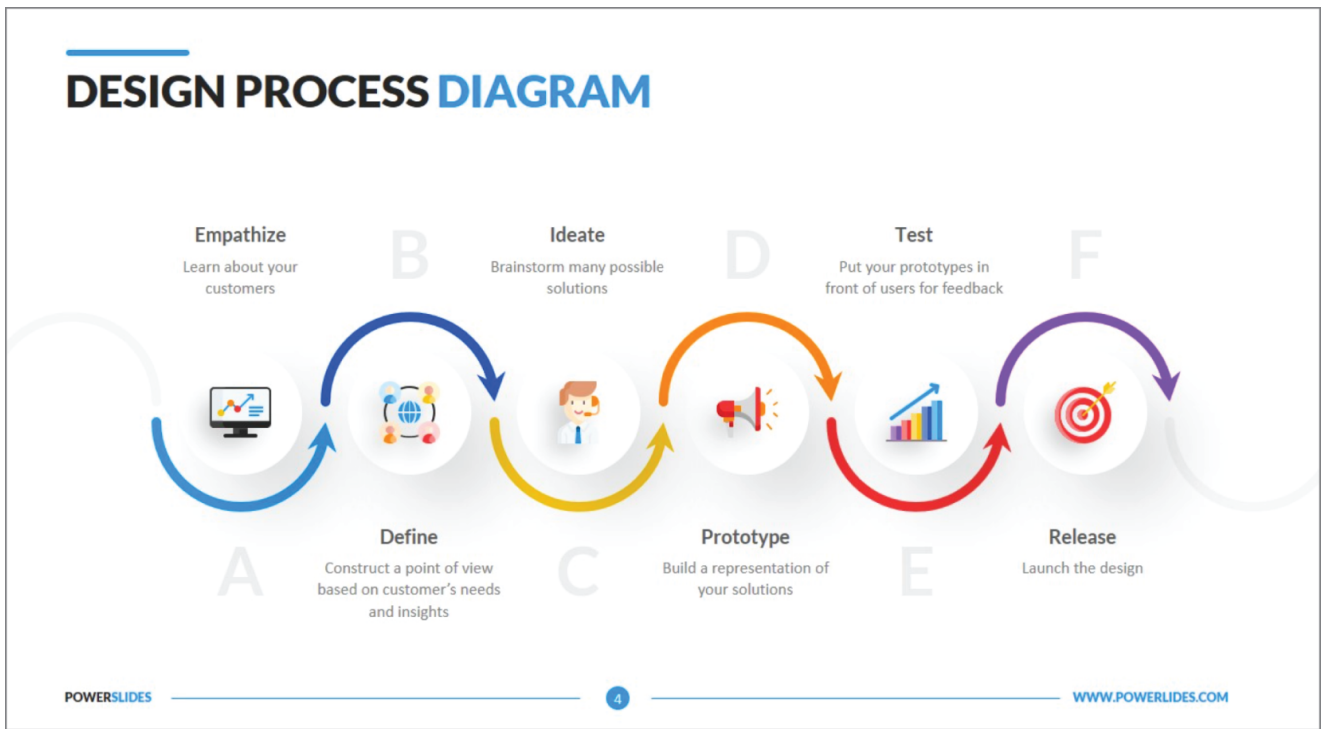


圖 17.1 早期線性使用者體驗流程圖範例

Figure 17.1 An example of an early linear UX process diagram

資料來源：經 PowerSlides /

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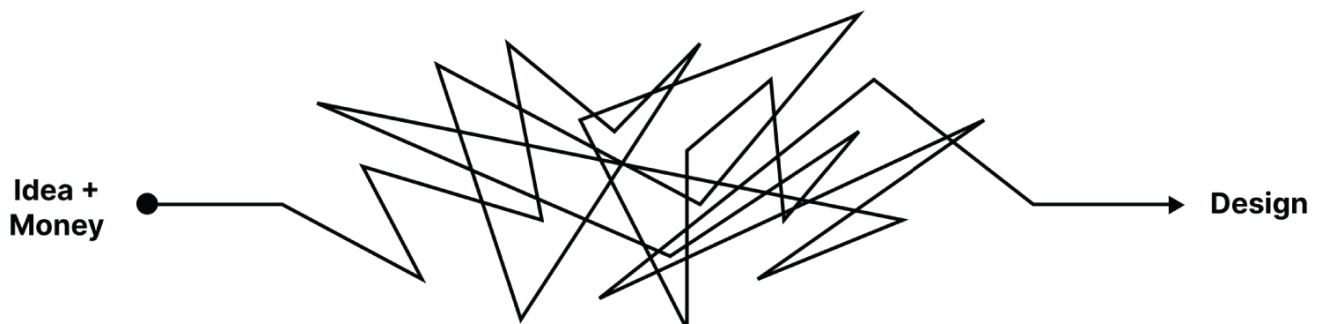


圖 17.2 「真正的」(TM) UX 設計過程：它從想法和金錢開始，UX 人員做事，設計隨之而來

Figure 17.2 The “ Real ” (TM) UX design process: It starts with Idea and Money, UX People Do Stuff, and Design follows

隨著人工智慧的到來，這個過程現在發生了翻天覆地的變化。困惑的不僅僅是設計師——許多商人也把他們的猴子弄成一堆。

With the arrival of AI, this process is now flipped on its head. And it's not just designers who are confused—many business people are also getting their monkeys in a bunch.

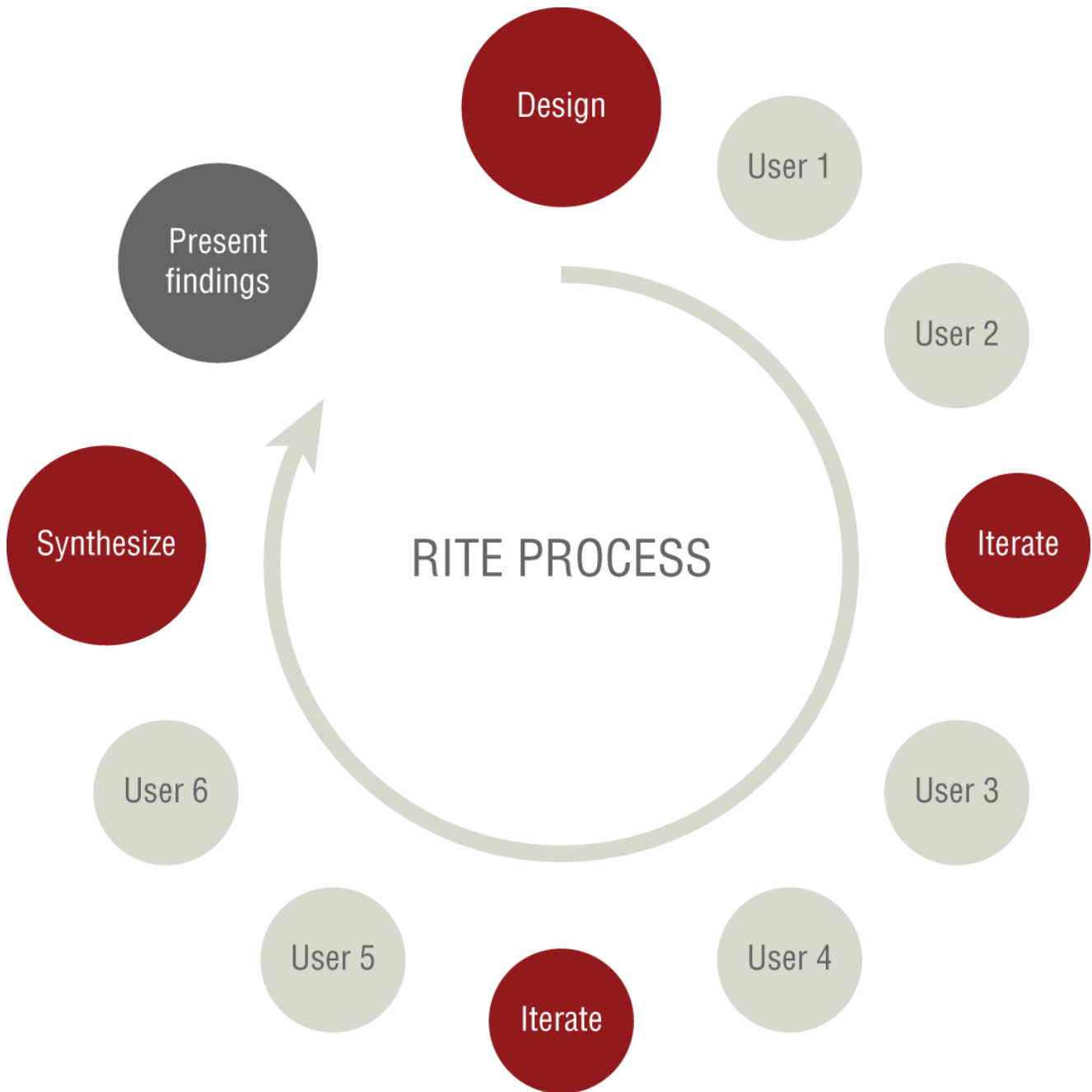


圖 17.3 RITE 過程的週期性

Figure 17.3 The cyclical nature of the RITE process

來源：<https://www.slideshare.net/usableinterface/rapid-testing-ct-uxpa-slideshare>

## 猴子還是基座？

### The Monkey or the Pedestal?

人工智慧產品與訓練猴子站在基座上背誦莎士比亞有很多共同點。但你先做什麼呢？訓練猴子，還是建造基座？

The AI product has a lot in common with training a monkey to stand on a pedestal and recite Shakespeare. But which do you do first? Train the monkey, or build a pedestal?

Astro Teller 博士以所有顧問的方式，向我們提供了一句簡潔易記但看似深刻的台詞：“先對付猴子”（1）。

Dr. Astro Teller, in the fashion of all consultants, feeds us a neat little easy-to-remember-yet-seemingly-profound line: “Tackle the monkey first” (1).

好吧，我不想告訴你，但在現實世界中，事情比這要複雜一些。首先，在新常態下，UI 是基座，猴子是 AI，莎士比亞當然是數據。那麼你先做什麼呢？用戶界面？人工智慧？還是數據？兩者都不是。

Well, I hate to tell you, but in the real world, it's a little more complicated than that. To start with, in the new normal, the UI is the pedestal, the monkey is the AI, and the Shakespeare is of course, the data. So which do you do first? The UI? The AI? Or the data? Neither one.

## 便條

### NOTE

你必須把所有這些都做在一起。新的 AI 參與流程是 UI、AI 和數據的不斷迭代，旨在快速發布產品。

You have to do all of them together. The new AI-involved process is a continuous iteration of UI, AI, and data, in combination, aimed toward rapid product release.

## 以使用者為中心的新思維方式

# A New Way of User-Centered Thinking

新的以人工智慧為中心的以使用者為中心的流程如圖 17.4 所示。

The new AI-inclusive user-centered process is shown in Figure 17.4.

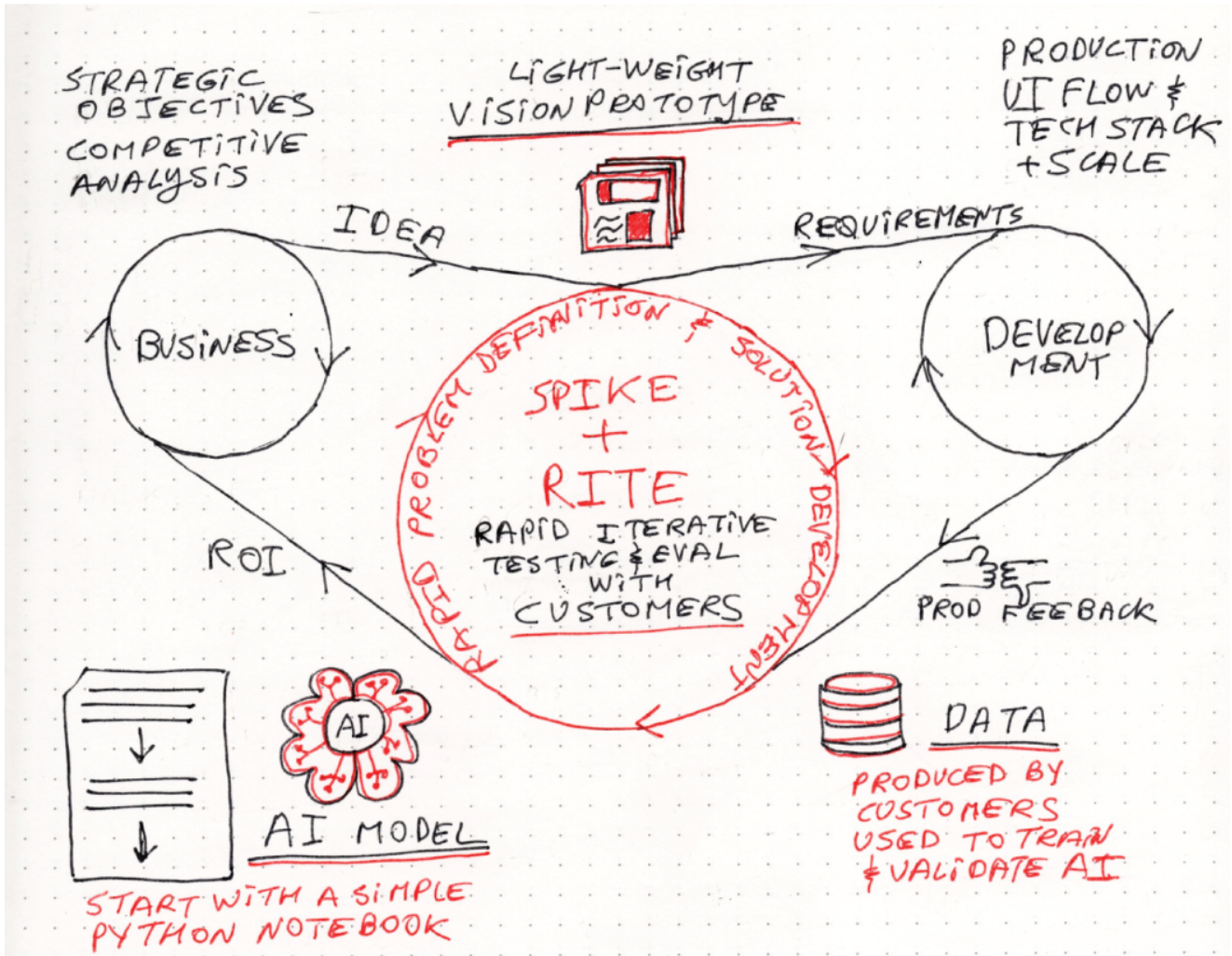


圖 17.4 新的 AI 包容性、以使用者為中心的設計流程在 UI、AI 和資料三大支柱之間迭代

Figure 17.4 The new AI-inclusive user-centered design process iterates between the three pillars: UI, AI, and data

讓我們快速演練一下。

Let ' s do a quick walk-through.

該過程以通過戰略目標和市場/競爭分析相結合產生的想法開始。然後，作為專案啟動的一部分，在快速跨職能腦力激盪會議中，將這個想法原型化。

The process is kicked off with an idea generated through a combination of Strategic Objectives and Market/Competitive Analysis. The idea is then prototyped in a quick cross-functional brainstorming session conducted as part of the project kick-off.

一旦想法被記錄下來並獲得資助，它就進入了這個「新常態」過程的核心：快速迭代的問題定義和解決方案開發週期。這個週期與傳統 RITE 的週期類似，但有一個重要的區別：它增加了週期性的 AI 模型“尖峰”。

Once the idea is documented and funded, it enters the core of this “new normal” process: a rapid iterative problem definition and solution development cycle. This cycle is similar to that of traditional RITE but with one important difference: It adds a periodic AI model “spike.”

## 尖峰到底是什麼？

### What the Heck Is a Spike?

敏捷術語中的「Spike」是一個快速、粗略的概念驗證項目，旨在產生一段工作程式碼，證明某些理想的想法是可行的。尖峰的重要部分是它超輕且粗糙，幾乎與生產代碼相反。就 AI 而言，這種峰值最好使用簡單的 Python 筆記本設置來實現，以獲得非常基本的 I/O “體驗”。它是人工智慧驅動系統最基本的概念驗證，旨在回答一個簡單的問題：這個特定模型是否產生了預期的結果？目的是快速確定問題定義並提供「概念驗證」解決方案。

“Spike” in agile parlance is a quick, rough, proof-of-concept project designed to produce a piece of working code demonstrating that some desirable idea is feasible. The important part of the spike is that it is super-lightweight and rough, almost the opposite of production code. In the case of AI, such a spike is best accomplished using a simple Python notebook setup for a very bare-bones I/O “experience.” It is the most basic proof of concept of an AI-driven system aimed at answering the simple question: Does this particular model produce the desired outcome? The purpose is to quickly nail down the problem definition and provide a “proof of concept” solution.

## 數據的作用是什麼？

### What Is the Role of Data?

循環的另一部分是數據。數據用於訓練和驗證 AI 模型。

The other part of the cycle is data. Data is used to train and validate the AI model.

## 便條

### NOTE

「AI」實際上是由兩個相互關聯的部分組成：AI 模型和數據。兩者緊密相連，就使用者體驗設計而言，可以將其視為單一系統。

“AI” is actually made up of two interconnected parts: AI model and data. The two are closely intertwined and, for the purposes of UX design, can be thought of as a single system.

該過程的核心是這樣的：當我們從最初的想法開始迭代 UX 設計時，我們發現了對 AI 模型的新要求。當 AI 模型透過尖峰迭代時，它需要新的資料，這些資料可能缺少重要部分或存在有害偏見（稍後在第 4 部分中詳細介紹）或法律所有權限制，這反過來又會影響 AI 模型的可行性，進而影響客戶所需的使用者體驗某些方面的可用性，需要設計解決方法和新/修改想法的循環，這會導致 AI 模型的重新尖峰，等等。

The core of the process works like this: As we iterate the UX design starting with the initial idea, we find new requirements for the AI model. When the AI model is iterated via a spike, it requires new data—data that might have important parts missing or have detrimental biases (more on this later in Part 4) or legal ownership constraints, which in turn affects the viability of the AI model, which in turn affects the availability of some aspect of UX desired by customers, requiring a design workaround and a cycle of new/modified ideas, which leads to re-spiking of the AI model, and so on.

## 客戶在這一切中在哪裡？

### Where Is the Customer in All This?

客戶在中心，他們一直屬於那裡。整個過程以與客戶的快速迭代測試為中心。如果有的話，使用這個過程，客戶反饋在開發過程中得到了更多的推進。

The customer is in the center, where they always belonged. The whole process is centered around rapid iterative testing with the customer. If anything, using this process, customer feedback is brought much more forward in the development process.

## 為什麼需要這種改變？

## Why Is This Change Necessary?

雖然客戶仍處於流程的中心，但隨著人工智慧的出現，有必要將技術納入設計解決方案迭代中。這是因為，多年來第一次，這項技術沒有 100% 被弄清楚。

While the customer is still at the center of the process, with the advent of AI, it has become necessary to include technology in design solution iterations. That 's because, for the first time in many years, the tech is not 100 percent figured out.

在紙質原型測試的早期，我們不得不使用“綠野仙蹤”用戶測試方法：版主要求評估者“單擊”紙質原型中的按鈕，然後助手充當“幕後的角色”，呈現輸出的下一頁，就好像它是“由系統生成的”一樣。「綠野仙蹤」是 InVision 和 Figma 原型設計成為常態之前使用的首選方法，旨在使紙質原型感覺更具互動性和更真實。

In the early days of paper prototype testing, we had to use the “ Wizard of Oz ” user testing approach: The moderator asks the evaluator to “ click ” the button in the paper prototype and the assistant then acts as a “ character behind the curtain, ” presenting the next page of the output as though it was “ generated by the system. ” “ Wizard of Oz ” was the method of choice used before InVision and Figma prototyping became the norm to make the paper prototype feel interactive and more realistic.

好吧，那些美好的過去又回來了！

Well, those good old days are back again!

AI 輸出具有高度交互性，高度依賴用戶輸入，並且建模起來非常乏味。Figma 原型最終是對真實事物的蒼白模仿，並且高度局限於按鈕標籤、佈局等膚淺的東西。人工智慧驅動專案的真正「核心」——人工智慧輸出本身——最終大多未經測試。

AI output is highly interactive, highly dependent on user input, and really tedious to mock up. Figma prototypes end up being pale imitations of the real thing and highly limited to superficial things like button labels, layout, etc. The real “ meat ” of the AI-driven project—the AI output itself—ends up mostly untested.

為了使使用者評估盡可能真實，人工智慧的輸出必須作為實際的人工智慧輸出「即時」體驗。幸運的是，構建具有真實輸出的 AI 模型正是我們作為峰值的一部分所做的。在敏捷、高度動態的環境中，將這個真實的 AI 輸出放在 Figma 中製作一堆模型是絕對沒有意義的。相反，我們可以在用戶研究過程中節省

大量時間和精力，並通過使用粗略的紙質模型和運行實際 AI 的 Python 筆記本來準確地向客戶講述整個產品故事，從而獲得更精確和現實的見解。

To make the user evaluation as realistic as possible, the output of the AI must be experienced “ live ” as an actual AI output. Fortunately, building an AI model with a realistic output is exactly what we do as part of the spike. It makes absolutely no sense in an agile, highly dynamic environment to then take this real AI output and do a bunch of mockups in Figma. Instead, we can save massive amounts of time and effort during user research and get more precise and realistic insights by using a rough paper mockup plus a Python notebook running the actual AI to accurately tell the entire product story to the customer.

以下是您在實踐中進行此類研究的方法：

Here ’ s how you do this kind of research in practice:

1. 引導您的客戶/評估人員完成您的簡單論文或 Figma 原型，以便他們了解用例並體驗 UI 的工作原理。仔細記下任何令人困惑的地方，並與客戶集思廣益，討論您的 UI 設計中可以改進的地方。Walk your customer/evaluator through your simple paper or Figma prototype so they can understand the use case and experience how the UI works. Make careful note of anything that is confusing and brainstorm with the customer about what can be improved in your UI design.
2. 現在他們已經了解了用例並看到了 UI，讓您的客戶集思廣益，在這種情況下他們通常會向 AI 驅動的產品提出問題——他們希望 AI 告訴他們什麼？他們想要什麼類型的互動？（回想一下我們在第 9 章「LLM 設計模式」中關於重述、對講、建議和護欄的討論。Now that they understand the use case and see the UI, have your customer brainstorm the questions they would normally ask the AI-driven product in this situation—what would they want the AI to tell them? What type of interaction would they want to have? (Recall our discussion about Restating, Talk-Back, Suggestions, and Guardrails in Chapter 9, “ LLM Design Patterns. ” )
3. 在 Python 筆記本中使用基本的「尖峰」AI 模型，嘗試回答評估者的問題，以查看模型如何回應以及需要改進的地方。請客戶想像您的簡單 Python 筆記本 AI 的輸出現在是 UI 的一部分。它看起來怎麼樣？可以改進什麼？答案應該多長？是否應該有一個簡短的回答，然後是“更多信息”鏈接？如果您有圖表作為 AI

輸出的一部分，它如何適合

UI？您是否有適當的按鈕、工具和建議，用於客戶工作流程的後續步驟？Use your basic “spiked” AI model in a Python notebook to try to answer the evaluator’s questions to see how your model responds and what needs to be improved. Ask the customer to imagine that the output of your simple Python notebook AI is now a part of the UI. How does it look? What can be improved? How long should the answer be? Should there be a short answer, followed by a “more information” link? If you have a chart as part of the AI output, how does it fit in the UI? Do you have the appropriate buttons, tools, and suggestions for next steps in the customer’s workflow?

4. 最後，查看數據並與您的評估員一起討論。您的簡單模型中缺少哪些資料？你怎麼能得到它？客戶是否對共享其數據以用於培訓目的有一些想法或一些有見地的評論？Finally, look at the data and discuss it together with your evaluator. What data is missing from your simple model? How can you get it? Might the customer have some ideas or some insightful comments about sharing their data for training purposes?

紙質原型和 Python 筆記本的結合是一種現代的“綠野仙蹤”用戶測試方法，其中輸出實際上是由沐浴在火中的綠臉（AI）提供的，主持人是向觀眾介紹 AI 的嚮導（客戶/評估者）。如果您正在構建一個主要由人工智能指導的產品，我建議您這樣做。何？因為這是獲得清晰、詳細和準確的反饋的最有效方法，告訴我們下一步需要改進什麼。效率和清晰度很重要。很多。

The combination of a paper prototype and a Python notebook is a kind of modern “Wizard of Oz” user testing approach, where the output is actually provided by the green face bathed in fire—the AI) and the moderator is the wizard introducing the AI to the audience (the customer/evaluator). If you are building a product that is guided in large part by AI, I recommend doing it this way. Why? Because it is the most efficient way to get clear, detailed, and accurate feedback that tells us what to improve next. And efficiency and clarity matter. A lot.

## 這如何影響使用者體驗的作用？

### How Does This Affect the Role of UX?

UX 的作用一直是三重的：

The role of UX has always been threefold:

- 為客戶消除障礙（現有產品的可用性測試）。Remove the barriers for customers (usability testing of existing products).
- 創新並執行競爭分析。Innovate and perform competitive analysis.
- 充當將客戶、業務和技術聚集在一起的“粘合劑”。Act as the “glue” bringing together customers, business, and technology.

我懷疑其中許多責任將在未來幾年繼續存在。然而，隨著人工智慧納入流程，使用者體驗角色（見圖 17.5）將客戶、業務和技術聯繫在一起，將變得越來越重要。

I suspect many of those responsibilities will remain alive and well in the coming years. However, it is the UX role of being the glue (see Figure 17.5) tying together customers, business, and technology that will become increasingly more important with the inclusion of AI into the process.

那是因為這項新技術是未知的，而且往往是不可預測的。這種新的人工智慧包容性使用者體驗流程證明了研究人工智慧技術本身的必要性，人工智慧技術現在已成為體驗中不可或缺的一部分。

That 's because this new technology is unknown and often unpredictable. This new AI-inclusive UX process is a testament to the need to research the AI technology itself, which has now become such an integral part of the experience.

在「人工智慧新常態」中將受到重視的其他方面是用戶體驗驅動的效率和成本節約，這是由快速原型設計、及時客戶反饋和加速精益決策驅動的。

The other aspects that will gain prominence in the “AI new normal” are UX-driven efficiencies and cost savings, which are driven by rapid prototyping, just-in-time customer feedback, and accelerated lean decision-making.

UX 角色的變化將在下一章中進行總結。

The changes in UX roles will be summarized in the next chapter.

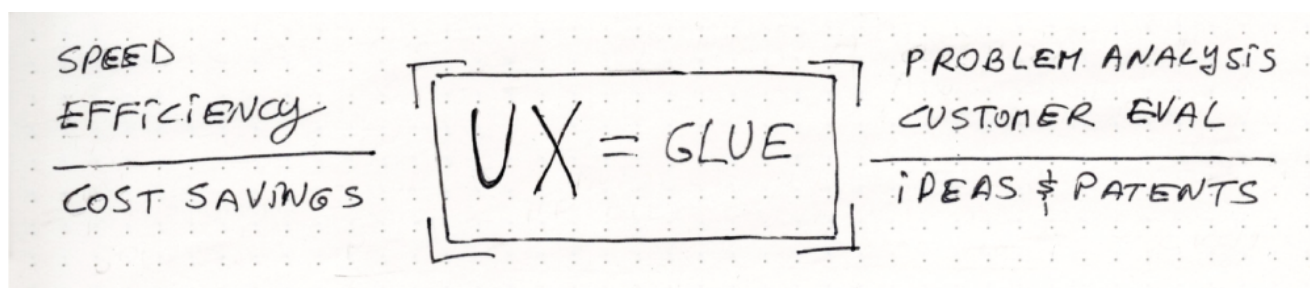


圖 17.5 在「新常態」中，使用者體驗的「黏合劑」方面——將客戶、業務和技術聚集在一起——將是最重要的。

Figure 17.5 In the “ new normal, ” the “ glue ” aspect of UX—bringing together customers, business, and technology—will be most important.

這是否意味著我必須了解人工智慧，以便向資料科學團隊成員提出好問題？

Does This Mean I Have to Learn About AI So That I Can Ask My Data Science Teammates Good Questions?

是。第 3、4 和 5 章應該可以幫助您入門。如果您想更深入地挖掘，Google、Amazon 和 Microsoft 都有精彩的人工智慧免費課程。

Yes. Chapters 3, 4, and 5 should get you started. Should you want to dig deeper, Google, Amazon, and Microsoft all have fantastic free courses on AI.

最終交接給 Dev

Final Handoff to Dev

圖表的最後一步是交接到開發。這是一個重要的分界線，因為它是新的。過去，生產開發過去常常與設計工作同時進行。新的人工智能包容性流程圖將探索性“尖峰”開發與生產工作分開，以確保和擴展系統以獲得生產級性能。從使用者體驗的角度來看，除了將生產交接作為一個明確的步驟，與流程「核心」的以客戶為中心的迭代性質分開之外，沒有太大變化。最終的交接材料應該為開發人員提供更多 UX 指導，例如輸入欄位的特定大小、下拉式清單中的值、預設值、預設排序等等。此外，明智的做法是在此最終交接中包含在使用者測試或核心團隊討論期間發現的極端情況的任何其他規範。基本準則是，在最終交接過程中，使用者體驗人員現在應該將開發團隊視為他們的客戶，並提供一切，以使設計的實施盡可能順利。

The final step of the diagram is the handoff to development. This is an important demarcation because it is new. In the past, production development used to happen concurrently with design efforts. The new AI-inclusive process diagram separates the exploratory “ spike ” development from the

production efforts to secure and scale the system for production-level performance. From the UX perspective, not much changes there, other than making production handoff an explicit step, separate from the customer-centered iterative nature of the “ core ” of the process. The final handoff materials should have more UX guidance for developers, like specific sizes of the input fields, values in the drop-downs, default values, default sorts, and so forth. Also, it is smart to include in this final handoff any additional specifications for corner cases discovered during the user testing or core team discussions. The basic guideline is that during the final handoff, the UXers should now think of the development team as their customer and provide everything to make the implementation of the design as smooth as possible.

另一個變化是生產部門的反饋回到核心流程，無論是在客戶反饋、AI模型反饋還是新生成的數據方面。在圖表中，這是一個提醒：

The other change is the feedback from the production department back into the core process, both in terms of customer feedback, AI model feedback, and newly generated data. It is a reminder, right there in the diagram, that:

## 便條

## NOTE

人工智慧驅動的產品實際上從未「完成」。人工智慧驅動的產品不是經過編程的，而是經過訓練的，正式發布只是第一步：這些新系統在發布後立即開始從用戶輸入和回饋中快速學習……而且學習的步伐只會加快。

The AI-driven products are never actually “ done. ” AI-driven products are not programmed—they are trained, and the GA release is but a first step: these new systems start to learn rapidly from user input and feedback immediately after they are released ... And the pace of learning is only accelerating.

## 還有更多變化即將到來

## Many More Changes to Come

現在您已經了解了：以人工智慧為中心的以使用者為中心的流程！如果你在背誦莎士比亞的基座上建造猴子，那麼你的人工智慧產品的第一次迭代看起來會很糟糕。也許是一個毛

絨猴子玩具，慢慢地背誦字母表，UX

團隊正在通過在紙上快速繪製一些可能的基座設計來調整基座的尺寸。然後 UX 會去找客戶，試圖弄清楚猴子 AI

模型加上基座紙質草圖的瘋狂組合是否能以某種方式解決他們的需求！（難怪 85% 的人工智慧驅動專案會出現橫盤整理？然而，如果你認識到這個過程是新常態，並且作為一個團隊，堅持定期重新審視和快速調整 UI、AI 和數據這三個方面，再加上持續的客戶反饋，你可能就有機會了。因為你正在建造的這隻猴子正在學習——而且速度很快。

So there you have it: the AI-inclusive user-centered process! If you are building the monkey on a pedestal reciting Shakespeare, the first iteration of your AI product is going to look pretty crappy. Perhaps a stuffed monkey toy, slowly reciting the alphabet, that the UX team is sizing up for a pedestal by rapidly sketching some possible pedestal designs on paper. And then UX goes to customers and tries to figure out if this crazy combo of a monkey AI model plus a paper sketch of a pedestal would somehow work to solve their needs! (Is there any wonder that 85 percent of AI-driven projects go sideways?) However, if you recognize this process as the new normal and, as a team, persist in periodically revisiting and rapidly adjusting each of the three aspects, UI, AI, and data, together with continuous customer feedback, you might just have a chance. Because this monkey you are building is learning—and fast.

## 便條

## NOTE

事實是，人工智慧是我們以前從未見過的。我們才剛開始探索新常態下面臨的可能性和要求。圍繞用戶在 UI 模型、AI 模型和數據之間循環運行的持續快速調整過程將是成功領導 AI 驅動項目的關鍵。

The truth is that AI is like nothing we 've seen before. We are just beginning to explore the possibilities and requirements we face in the new normal. Continuous rapid adjustment process that revolves around the user in a loop running between the UI mockup, AI model, and data will be the key to successfully leading AI-driven projects with UX.

## 參考

## Reference

1. 1. 特勒, A. (2016)。先對付猴子。中等。 <https://blog.x.company/tackle-the-monkey-first-90fd6223e04d1>. Teller, A. (2016). Tackle the monkey first. Medium. <https://blog.x.company/tackle-the-monkey-first-90fd6223e04d>

## 視角：設計 AI 體驗：挑戰、策略和 UX 設計師不斷變化的角色

# PERSPECTIVE: DESIGNING AI EXPERIENCES: CHALLENGES, STRATEGIES, AND THE EVOLVING ROLE OF UX DESIGNERS

作者：邁克·奧倫博士

By Dr. Mike Oren

目前，我們的世界充斥著將人工智慧整合到我們的體驗中的呼聲，但沒有明確的計劃，而且通常只是對該技術的表面理解。雖然許多大型科技公司在資源方面具有優勢，並且在探索中搶佔先機，但現實情況是，公司仍在努力在快速變化的環境中找出理想的體驗。

Our world is currently inundated with calls for AI integration in our experiences without clear plans and often only a surface-level understanding of the technology. While a lot of large tech companies have an advantage in terms of resources and earlier head starts in their explorations, the reality is that companies are still trying to figure out the ideal experience in a rapidly changing environment.

直到過去十年，使用者體驗設計師還必須與他們所設計的媒體中的工程師和其他專家密切合作。在互聯網的黎明時期，許多設計師學習了 HTML 或與開發人員密切合作，在印刷品開始緩慢走向滅絕時進行實驗和了解這種媒介的可能性。然後，當 iPhone 和其他智慧型手機首次問世時，我們看到了類似的行業劇變。我們都不知道該如何為這些體驗進行設計。儘管智能手機不像互聯網那樣對我們的行業造成破壞，但它們可以為那些擔心設計未來的人提供更新的模式。

Up until the last decade, UX designers had to work closely with engineers and other experts in the medium they were designing for. At the dawn of the Internet, many designers learned HTML or worked closely with developers to experiment and learn what was possible with the medium as print began its slow march to extinction. We then saw a similar upheaval in our profession when the iPhone and other smartphones first came out. We were all clueless about how to design for those experiences. Although

smartphones weren't as disruptive to our profession as the Internet, they can provide a more recent model for those worried about the future of design.

隨著人工智慧的出現，我們看到了我們領域的另一次顛覆，從長遠來看，它最終可能會像網路印刷一樣顛覆互動設計，但我們已經更好地利用更廣泛的適應技術來調整。這一次，我們不需要關注特定的視覺界面或如何處理不同的手勢，而是需要更多地思考幕後發生的事情。這意味著不僅與工程師合作，還與資料科學家和原始資料本身合作。

With the dawn of AI, we're seeing another disruption to our field that could ultimately be as disruptive to interaction design in the long run as the Internet was to print, but we've gotten better at pivoting with a wider set of adaptation techniques. This time around, instead of focusing on a specific visual interface or how to handle different gestures, we need to think more about what's going on behind the scenes. And that means working not just with engineers but also with data scientists and the raw data itself.

讓我們來談談大家可能都聽說過的事情：人工智慧模型中的幻覺。儘管有這個短語以及它們在非技術文章中經常被描述的方式，但幻覺並不是電腦編造的。它們實際上是演算法採取不太可能的連接路徑。對於使用機率加權連接網路的生成式人工智慧演算法來說，這種「創造力」是一種功能，而不是一個錯誤。因此，當電腦給我們一些看似荒謬的東西時，它只是走了一條人跡罕至的道路。如果您正在尋找靈感，這很好，但如果您正在尋找準確的答案，那就不太好了。當我們設計體驗時，了解這些限制非常重要。

Let's talk about something everyone has probably heard about: hallucinations in AI models. Despite the phrase and how they're often portrayed in nontechnical articles, hallucinations aren't the computer making things up. They're actually the algorithm taking a less likely path of connection. For generative AI algorithms, which use a network of probabilistic weighted connections, this kind of "creativity" is a feature, not a bug. So, when the computer gives us something that seems nonsensical, it's just taking a path less traveled. That's great if you're looking for inspiration but not so great if you're looking for a precise answer. It's important to understand these limitations as we design experiences.

作為設計師，您有能力幫助控制您設計的人所經歷的幻覺程度。透過與資料科學家或工程師合作，您實際上可以操縱演算法選擇接受的隨機性等級，因為它在選項網路中做出可用的選擇。您還可以通過為網路提供更多具有現有信息的訓練數據集來幫助提高網路中更多事實節點的優勢。這開始將服務設計的更多方面引入 UX 實踐中，設計師現在也設計了前端和後端。這甚至可能包括與團隊合作，確定哪些模型可能需要混合在一起才能提供預期體驗，

而不是僅依賴大型語言模型（LLM）。正是這種模型的混合最終將幫助我們實現差異化和個性化，這是長期以來對能夠真正適應個人需求的體驗的夢想。

As a designer, you have the ability to help control the level of hallucinations that the people you design for experience. By working with data scientists or engineers, you can actually manipulate the level of randomness that the algorithm is choosing to accept as it makes the choices within the network of options available to it. You may also help increase the strengths of more factual nodes in the network by giving it more training datasets with the information present. This begins to introduce more aspects of service design into UX practice, with the designer now designing both the front end and the back end as well. This may even include working with the team to identify what models might need to be mixed together to deliver the intended experience rather than relying only on a large language model (LLM). It's this mixing of models that will ultimately help us reach that differentiation and personalization that has long been the dream of experiences that can truly adapt to the needs of the individual.

作為設計師，我們有能力在前端做出明智的選擇，這可以幫助引導最終消費者找到更有可能產生他們期望的結果的輸入。為此，您可以使用 Mad Libs 並提供後續提示（如果它更像是聊天界面或一些尚未發明的新概念），以幫助微調和減少您的算法選擇不符合人類意圖和目標的路徑的機會。

As designers, we have the ability to make informed choices on the front end that can help guide the end consumer to the inputs that will more likely have results that they're expecting. For that, you can use Mad Libs and provide follow-up prompts (if it's more of a chat interface or some new concept that has yet to be invented) in order to help fine-tune and reduce the chances that your algorithm is going to select paths that don't align with the human intent and goals.

儘管它很簡單，但目前尚未充分利用的一種潛在解決方案就是簡單地為您設計的人類設定明確的期望，即他們可以從人工智慧中獲得什麼的期望。這項挑戰很大程度上來自於我們的行銷團隊想要提升人工智慧的能力。此時生成的內容不太可能是 100% 完美的，因此您絕對需要循環中的人員來審查、驗證和編輯。否則，你就會讓這個人失望。沒有人願意讓我們設計的人失望，所以一定要澄清人工智慧是否真的在創造或只是幫助起草。

One potential solution that's currently underutilized, despite its simplicity, is simply setting clear expectations for the humans you design for regarding the expectations of what they can get from the AI. A lot of this challenge comes from our marketing teams wanting to puff up AI's capabilities. Generated content at this point is unlikely to be 100 percent perfect, so you absolutely need the human in the loop to review, verify, and edit. Otherwise, you set the person up for disappointment. Nobody wants to

disappoint the people we design for, so be sure to clarify if AI is really creating or just helping to draft.

通常，在與 AI 合作時，問題和解決方案並沒有被很好地理解或商品化，因此作為設計師，我們需要確保了解 AI 試圖解決的問題。目前人工智慧設計中的許多困難挑戰都是關於將用例與人們認為它可以或應該做什麼的能力和期望保持一致。如果這兩個地方之間的差距太大，那麼我們要么需要針對一組對這些限制感到滿意的用戶，創建設計干預措施來幫助引導人們，如果我們自己構建算法，則投入更多資金來改進算法，或者等到它能夠達到預期時引入體驗。這就是我們作為設計師在我們試圖解決的環境中探索不同模式的重要之處，儘管我們在這個空間工作的前幾次可能會出錯。例如，越來越清楚的是，對於許多用例來說，僅僅是一個可以輸入任何內容的免費輸入框並不是一個很好的解決方案，因為人們非常不擅長描述他們想要或需要什麼。人工智慧非常不擅長提取這些需求的潛在背景——露西·薩奇曼（Lucy Suchman）的書《計劃與情境行動：人機通訊的問題》（1987年，劍橋大學出版社）在大約 38 年後仍然有效。人工智慧設計實踐的另一個重要方面是必須考慮對您的工作的道德影響，以確保您盡最大努力不造成傷害。

Often, when working with AI, the problems and solutions are not well understood or commoditized, so as designers, we need to make sure we understand what problems AI is trying to solve. A lot of the difficult challenges within AI design right now are about aligning the use cases with the capabilities and the expectations of what people believe it can or should do. If there ' s too much of a gap between those two places, then we either need to target a set of users who are okay with those limitations, create design interventions to help guide people, invest more heavily in improving the algorithms if we ' re building them ourselves, or wait to introduce the experience until it can deliver on expectations. That ' s where it ' s important for us, as designers, to explore different patterns within the context that we ' re trying to solve for, although we ' ll probably get it wrong the first couple of times we work within this space. For example, it ' s becoming clearer that just a free input box where a person can type anything isn ' t such a great solution for a lot of use cases because people are really bad at describing what they want or need. And AI is very bad at pulling out the underlying context of those needs—Lucy Suchman ' s book, *Plans and Situated Actions: The Problem of Human-Machine Communication* (1987, Cambridge University Press) still holds up some 38 years later. Another important aspect of your AI design practice is having to think about the ethical implications for your work to make sure that you ' re doing your best to do no harm.

隨著設計角色在人工智慧面前不斷發展，有一件事是肯定的：為了獲得最佳的使用者成果，設計師儘早參與並在整個人工智慧專案中保持參與至關重要。

As the design role continues to evolve in the face of AI, one thing is for sure: For best user outcomes, it is critical for designers to get involved early and stay involved throughout the AI project.

## 關於邁克·奧倫

### About Mike Oren

Mike Oren 博士領導 Klaviyo 的設計師團隊，為客戶打造 AI 和數據體驗。他在本科工作（德堡大學）和研究生工作（愛荷華州立大學）中對人工智能進行了編程，並在伊利諾伊理工學院的設計學院項目中為設計師教授數據素養。Mike 可以在 LinkedIn 上找到：<http://linkedin.com/in/mikeoren>。

Mike Oren, PhD, leads the team of designers at Klaviyo, crafting the AI and data experiences for their customers. He has programmed AI in both undergraduate work (DePauw University) and graduate work (Iowa State University) and teaches data literacy for designers at Illinois Institute of Technology 's Institute of Design program. Mike can be found on LinkedIn: <http://linkedin.com/in/mikeoren>.