第22章CHAPTER 22AI倫理AI Ethics

如果沒有對人工智慧倫理以及人工智慧使用對環境影響等人類創造力、社會福祉和環境影響等所有複雜和多方面的主題的討論，任何人工智慧驅動的產品框架都是不完整的。這個主題太大了，單一作者無法解決。在本章中，Daria 和我收集了使用者體驗名人的多種觀點，他們對人工智慧倫理的各個方面提出了簡短而實用的觀點。我們從保羅．布萊恩 （Paul Bryan） 的 AI Humanifesto
開始，它為本章的其餘部分提供了一個出色的框架。接下來我們是 Daria Kempka 的《人工智慧產品設計師的實用道德》，她在其中闡述了應對人工智慧技術對環境影響的嚴厲道德討論的實踐方法。Ranjeet Tayi 在 Informatica 的 AI UX 團隊中撰寫了他對道德 AI
產品開發實用方法的看法。接下來我們有
設計人工智慧：超越介面，作者是克里斯．諾塞爾 （Chris Noessel），他巧妙地探索了人類與堆積如山的人工智慧廢話互動的複雜性。最後，我們以凱西．胡德茨 （Casey Hudetz） 的演講結束了這一章，他介紹了《哦，埃加茲！在人工智慧時代保留您的創意聲音。並非所有觀點都完全一致，但這正是人工智慧倫理這個複雜且多方面的主題的重點。請負責任地享受！

No AI-driven product framework is complete without the discussion of AI ethics and all of the complex and multifaceted topics of human creativity, societal well-being, and environmental impacts of AI use. This topic is far too large of a single author to tackle. In this chapter, Daria and I collected multiple perspectives from the UX luminaries who present a brief and practical view on various aspects of AI ethics. We start with the AI Humanifesto by Paul Bryan, which presents an excellent framework for the remainder of the chapter. We follow with Daria Kempka’s Practical Ethics for AI Product Designers, where she lays out hands-on approaches to tough ethics discussions and environmental impacts of the AI technology. Ranjeet Tayi writes about his AI UX team at Informatica in his perspective on the Practical Approach to Ethical AI Product Development. Next we have Designing AI: Beyond the Interface, by Chris Noessel, who deftly explores the intricacies of humans interacting with mountains of AI bullshit. Finally, we finish off this chapter with Casey Hudetz, who presents Oh, Egads! Preserving Your Creative Voice in the Age of AI. Not all of the perspectives completely agree with each other—but that is precisely the point when it comes to a complex and multifaceted subject of AI ethics. Please enjoy responsibly!

視角：AI HUMANIFESTO

PERSPECTIVE: AI HUMANIFESTO

保羅．布萊恩

By Paul Bryan

AI Humanifesto 是親人類 AI 產品設計的指導框架。它平衡了這項令人興奮的新技術的力量與人類創造力、社會福祉和環境永續性。通過制定明確的原則和探究性問題，它使研究人員、設計師、工程師、數據科學家和業務利益相關者能夠創建人工智能系統，以增強人類潛力，同時最大限度地降低傷害或剝削的風險。目標是為使用者體驗和產品設計專業人士提供簡短、易於使用、經過深思熟慮的總結，說明確保人工智慧產品能夠滿足人類需求而不是人類被人工智慧利用的最重要考慮因素。

The AI Humanifesto is a guiding framework for pro-human AI product design. It balances the power of this exciting new technology with human creativity, societal well-being, and environmental sustainability. By setting clear principles and probing questions, it empowers researchers, designers, engineers, data scientists, and business stakeholders to create AI systems that enhance human potential while minimizing the risk of harm or exploitation. The goal is to provide UX and product design professionals with a short, easy-to-use, well-thought-out summary of the most important considerations for ensuring that AI products will serve human needs rather than humans being exploited by AI.

以下是更新的 AI Humanifesto，其中包含 STRAT 2024 Pod
討論中針對五個概念中每一個概念的新增內容和注意事項。

Here is the updated AI Humanifesto with the additions and considerations from the STRAT 2024 pod discussions for each of the five concepts.

控制（治理、問責）

Control (Governance, Accountability)

控制確保人工智慧的各個方面（演算法、數據、決策過程和安全性）都是透明的，並且在人工監督範圍內。它強調用戶自主權，使用戶能夠理解和控制他們與 AI 的互動。控制是關於管理人工智慧系統、開發人員、企業和使用者之間的權力平衡，確保沒有實體擁有不受控制的影響力，特別是在資料使用和決策等領域。

Control ensures that all aspects of AI—algorithms, data, decision-making processes, and security—are transparent and within human oversight. It emphasizes user autonomy, giving users the ability to understand and control their interactions with AI. Control is about managing the balance of power between the AI system, developers, businesses, and users, ensuring no entity has unchecked influence, especially in areas like data use and decision-making.

控制的關鍵方面：

Key Aspects of Control:

- 用戶自主權：使用者應該能夠修改或選擇退出某些人工智慧功能。人工智慧的設計必須賦予用戶權力，使他們能夠控制它如何影響他們的互動和數據。User Autonomy: Users should have the ability to modify or opt out of certain AI functionalities. AI must be designed to empower users, allowing them to exercise control over how it affects their interactions and data.
- 演算法的透明度：必須清楚人工智慧系統如何做出決策，讓使用者了解哪些方面由演算法控制以及這些演算法如何運作。Transparency of Algorithms: There must be clarity about how AI systems make decisions, allowing users to understand which aspects are governed by algorithms and how those algorithms function.
- 對數據的控制：用戶必須保留對其數據的控制權，包括了解數據的存儲、處理和共享方式，以及能夠訪問或刪除數據。人工智慧系統應為資料收集和使用提供明確的同意流程。Control Over Data: Users must retain control over their data, including knowing how it’s stored, processed, and shared, and having the ability to access or delete it. AI systems should offer clear consent processes for data collection and usage.

信任（透明度、可靠性、可解釋性）

Trust (Transparency, Reliability, Explainability)

信任是透過一致性、透明度和負責任的資料處理來建立的。為了讓使用者信任人工智慧系統，他們必須看到對資料使用、決策和系統行為的開放性的持續承諾。人工智慧的流程必須透明，並願意承認偏見或錯誤。信任是透過使人工智慧系統可解釋並確保它們在適應使用者需求的同時滿足期望來贏得的。

Trust is built through consistency, transparency, and the responsible handling of data. For users to trust AI systems, they must see a continual commitment to openness about data usage, decisions, and

system behavior. AI must be transparent in its processes and willing to acknowledge biases or mistakes. Trust is earned by making AI systems explainable and ensuring they fulfill expectations while adapting to user needs.

信任的關鍵面向：

Key Aspects of Trust:

- 可靠性和一致性：當人工智慧系統始終如預期地執行時，信任就會得到加強。這包括準確、透明的流程以及以使用者可以理解的方式解釋結果的能力。Reliability and Consistency: Trust is reinforced when AI systems consistently perform as expected. This includes accurate, transparent processes and the ability to explain results in a way that users can understand.
- 錯誤的所有權：值得信賴的人工智慧系統會在錯誤發生時承認。不應掩蓋或隱藏錯誤，而應該有錯誤報告流程，並就如何解決問題進行清晰的溝通。Ownership of Mistakes: Trustworthy AI systems acknowledge when errors occur. Rather than obscure or hide mistakes, there should be processes for error reporting and clear communication about how issues are being resolved.
- 數據責任：信任取決於道德資料處理。人工智慧系統必須提供清晰、易於理解的解釋，說明資料的擷取、儲存、共享和使用方式。使用者應該確信他們的資料受到保護並且僅在規定的參數內使用。Data Responsibility: Trust hinges on ethical data handling. AI systems must provide clear, accessible explanations of how data is captured, stored, shared, and used. Users should be confident that their data is protected and only used within stated parameters.
- 協作和開放：人工智慧系統必須積極與使用者合作，提供回饋機會，解決問題，並證明系統的設計充分考慮了使用者的最大利益。Collaboration and Openness: AI systems must actively work with users, offering opportunities for feedback, addressing concerns, and demonstrating that the system is designed with the user’s best interests in mind.
- 問責制：開發人員和組織必須對人工智慧輸出負責，特別是在發生傷害時。當人工智慧控制的決策對使用者產生負面影響時，使用者應該有辦法解決不滿或挑戰。Accountability: Developers and organizations must be held accountable for AI outputs, particularly when harm occurs. Users should have a path to address grievances or challenges when AI-controlled decisions negatively impact them.

多樣性（安全性、隱私性、穩健性）

Diversity (Security, Privacy, Robustness)

人工智慧的多樣性意味著透過確保人工智慧系統在多樣化、全面的資料集上進行訓練並適應廣泛的使用者和需求來培養多樣化和包容性的體驗。人工智慧絕不能延續偏見、刻板印象或排斥，而應積極尋找代表性方面的差距並努力實現包容性。多樣性意味著人工智慧公平地為所有人服務，無論種族、性別、年齡、文化或能力如何。

Diversity in AI means fostering varied and inclusive experiences by ensuring that AI systems are trained on diverse, comprehensive datasets and are adaptable to a wide range of users and needs. AI must not perpetuate biases, stereotypes, or exclusion but should actively seek out gaps in representation and work toward inclusion. Diversity means that AI serves all people equitably, regardless of race, gender, age, culture, or ability.

多樣性的關鍵面向：

Key Aspects of Diversity:

- 包容性數據：人工智慧系統應使用全面、包容的資料集構建，以反映不同的人類經驗。他們必須避免排除代表性不足的人群的歪曲或有偏見的數據。系統應該隨著對多樣性的新理解的發展而適應和更新。Inclusive Data: AI systems should be built with comprehensive, inclusive datasets that reflect diverse human experiences. They must avoid skewed or biased data that excludes underrepresented populations. Systems should adapt and update as new understanding of diversity evolves.
- 承認偏見和差距：人工智慧必須對其局限性和偏見保持透明。開發人員應定期評估資料集中缺少哪些人，並積極解決這些差距。例如，美洲原住民等邊緣化群體的代表性往往不足，這些差距必須得到糾正。Acknowledging Bias and Gaps: AI must be transparent about its limitations and biases. Developers should regularly assess who is missing from the datasets and actively address these gaps. For example, marginalized groups such as Native Americans are often underrepresented, and these gaps must be rectified.
- 與社會一起發展：隨著多樣性的概念隨著時間的推移而變化，人工智慧應該具有適應性，認識新的社會現實並更新其模型以保持相關性和公平性。Evolving with Society: As the concept of diversity shifts over time, AI should be adaptive, recognizing new social realities and

updating its models to remain relevant and fair.

- 打破障礙：人工智慧應該有助於打破識字率、年齡、社會經濟地位和其他鴻溝的障礙。它必須滿足用戶的需求，適應他們的專業水平並提供易於訪問、用戶友好的交互。Breaking Barriers: AI should help break down barriers of literacy, age, socioeconomic status, and other divides. It must meet users where they are, adapting to their level of expertise and providing accessible, user-friendly interactions.

- 文化敏感性：人工智慧應該理解並尊重文化差異，提供細緻入微且對不同人群的社會規範敏感的解決方案。Cultural Sensitivity: AI should understand and respect cultural differences, offering solutions that are nuanced and sensitive to the social norms of different populations.

安全（包容、偏見、公平、公平）

Safety (Inclusion, Bias, Equity, Fairness)

人工智慧設計的安全性確保系統保護使用者免受身體、情感和環境上的傷害。安全不僅限於身體健康，還包括對隱私、同意、資料安全以及避免有害或成癮行為的道德擔憂。道德人工智慧設計為用戶提供了有關人工智慧風險和收益的透明度，確保他們充分了解並控制人工智慧如何影響他們的生活。

Safety in AI design ensures that systems protect users from harm—physically, emotionally, and environmentally. Safety goes beyond physical well-being to include ethical concerns about privacy, consent, data security, and avoiding harmful or addictive behaviors. Ethical AI design provides users with transparency about the risks and benefits of AI, ensuring they are fully informed and in control of how it impacts their lives.

安全的關鍵方面：

Key Aspects of Safety:

- 隱私和資料安全：保護使用者隱私並確保個人資料的安全處理是安全的基本組成部分。用戶必須了解他們的數據是如何使用的，並且系統必須安全，防止洩露或濫用。Privacy and Data Security: Protecting user privacy and ensuring secure handling of personal data is a fundamental part of safety. Users must understand how their data is being used, and systems must be secure against breaches or misuse.

- 同意和教育：人工智慧系統必須為使用者提供同意機制，並就系統的工作原理提供清晰、易於理解的解釋，包括其風險、好處和偏見。應教育使用者如何使用其資訊以及潛在後果。Consent and Education: AI systems must provide consent mechanisms for users and offer clear, understandable explanations of how the system works, including its risks, benefits, and biases. Users should be educated on how their information is used and the potential consequences.
- 身心健康：人工智慧必須優先考慮人身安全（在自主系統或醫療應用的情況下），並防止情感傷害。系統應避免促進成癮行為、社會孤立或造成過度的精神壓力。Physical and Emotional Well-Being: AI must prioritize physical safety (in the case of autonomous systems or medical applications) and also guard against emotional harm. Systems should avoid promoting addictive behaviors, social isolation, or creating undue mental stress.
- 風險管理：人工智慧系統必須包括內建機制來降低風險、識別潛在危害並主動設計針對這些危害的保障措施。Risk Management: AI systems must include built-in mechanisms to mitigate risks, identifying potential harms and proactively designing safeguards against them.
- 創新與安全：人工智慧開發必須平衡創新與對安全和道德行為的堅定承諾。在不損害用戶福祉的情況下突破界限對於永續進步至關重要。Innovation vs. Safety: AI development must balance innovation with a strong commitment to safety and ethical behavior. Pushing boundaries without compromising user well-being is critical for sustainable progress.

平衡（永續、和諧、福祉、人類賦權）

Balance (Sustainability, Harmony, Well-Being, Human Empowerment)

平衡的重點是實現人工智慧發展中競爭力量之間的和諧，例如人類貢獻與自動化、創新與安全以及環境永續性與技術能力。平衡確保人工智慧不會走向可能損害個人、社會或環境的極端。相反，它強調一種靈活的方法，適應不斷變化的需求，並在效率、創造力和道德考慮之間找到平衡。

Balance focuses on achieving harmony between competing forces in AI development, such as human contribution versus automation, innovation versus safety, and environmental sustainability versus technological capability. Balance ensures that AI doesn’t push toward extremes that could harm individuals, society, or the environment. Instead, it emphasizes a flexible approach that adapts to shifting

needs and finds equilibrium between efficiency, creativity, and ethical considerations.

平衡的關鍵方面：

Key Aspects of Balance:

- 人類賦權：人工智慧產品如何幫助使用者實現目標並增強人類創造力將強調人工智慧應該如何增強而不是削弱人類潛力。Human Empowerment: How the AI product empowers users to achieve their goals and amplify human creativity would emphasize how AI should augment rather than diminish human potential.
- 人類與人工智慧的貢獻：人工智慧應該補充人類的能力，而不是取代人類的能力。在創意或決策過程中，應該清楚哪些部分是由人工智慧生成的，哪些部分涉及人類輸入。Human vs. AI Contribution: AI should complement human capabilities rather than replace them. In creative or decision-making processes, it should be clear which parts are AI-generated and which involve human input.
- 效率與創造力：人工智慧應該提高效率，但不能以犧牲人類創造力為代價。平衡涉及確保系統優化生產力，同時為靈活性、創新和想像力留出空間。Efficiency vs. Creativity: AI should drive efficiency but not at the cost of human creativity. Balance involves ensuring that systems optimize productivity while leaving room for flexibility, innovation, and imagination.
- 對環境造成的影響：人工智慧系統應盡量減少其環境足跡，特別是在能源使用方面。開發人員應透明地傳達人工智慧的環境成本，並在更簡單、更永續的方法可行時避免不必要的使用。Environmental Impact: AI systems should minimize their environmental footprint, especially regarding energy usage. Developers should transparently communicate the environmental costs of AI and avoid unnecessary use when simpler, more sustainable methods are viable.
- 社交和人際關係：人工智慧必須支持和增強人際關係，而不是削弱人際關係。它不應取代有意義的人際互動或助長有害行為，例如對科技成癮或多巴胺驅動的參與模式。Social and Interpersonal Relationships: AI must support and enhance human relationships rather than diminish them. It should not replace meaningful human interactions or foster harmful behaviors, such as addiction to technology or dopamine-driven patterns of engagement.

關於 Paul Bryan 和 AI Humanifesto

About Paul Bryan and AI Humanifesto

AI Humanifesto （www.aihumanifesto.com） 是一個用於設計親人類 AI 產品的簡單框架。其五個核心概念平衡了這項令人興奮的新技術的進步和力量與人類創造力、社會福祉和環境永續性。AI Humanifesto 由 Cre8 和 STRAT 產品設計會議的執行製片人 Paul Bryan 創建，並在過去幾年中受到這些會議的演講者、與會者和顧問的指導和塑造。您可以通過 LinkedIn （www.linkedin.com/in/cre8conf） 聯繫 Paul Bryan。

The AI Humanifesto (www.aihumanifesto.com) is a simple framework for designing pro-human AI products. Its five core concepts balance the progress and power of this exciting new technology with human creativity, societal well-being, and environmental sustainability. The AI Humanifesto was created by Paul Bryan, executive producer of the Cre8 and STRAT product design conferences, and has been guided and shaped by speakers, attendees, and advisers of these conferences over the past several years. You can reach Paul Bryan through LinkedIn (www.linkedin.com/in/cre8conf).

視角：AI產品設計師的實用倫理

PERSPECTIVE: PRACTICAL ETHICS FOR AI PRODUCT DESIGNERS

作者：達里亞．肯普卡

By Daria Kempka

作為設計師，我們每天都在創新、謀生和努力不將我們的靈魂出賣給魔鬼之間的緊張關係。人工智慧的興起帶來了道德困境，我們必須準備好承擔個人責任來解決。透過將道德考量融入設計過程，我們設計的產品將更有可能符合我們的價值觀。

As designers, we spend our days navigating the tension between innovation, making a living, and trying not to sell our souls to the devil. The rise of AI presents ethical dilemmas we must be prepared to take personal responsibility for addressing. By embedding ethical considerations into the design process, the products we design will be more likely to align with our values.

了解激勵措施支配人類行為

Understand That Incentives Rule Human Behavior

埃里卡·霍爾（Erika Hall）說得最好：“商業模式就是網格”（1）。您在公司工作時所做的每一個設計決定都受該法律的約束。企業的存在是為了盈利和發展。正如庫爾特·馮內古特（Kurt Vonnegut）所寫，“公司沒有良心。但它確實有一條規則，那就是為股東實現利潤最大化，無論國家或地球甚至股東本身發生什麼事“（2）。或者正如約翰·斯坦貝克所說，“我們很抱歉。不是我們。這是怪物。銀行不像一個人.....銀行不是男人。碰巧銀行裡的每個人都討厭銀行的所作所為，但銀行卻這樣做了。我告訴你，銀行不僅僅是人。這是怪物。男人做到了，但他們無法控制它」（3）。

Erika Hall said it best:“The business model is the grid”(1). Every design decision you make when you work for a corporation is ruled by this law. Businesses exist to make a profit and to grow. As Kurt Vonnegut wrote,“A corporation has no conscience. But it does have one rule, and that is to maximize profits for the shareholders, no matter what may happen to the country or the planet or even to the shareholders themselves”(2). Or as John Steinbeck said,“We’re sorry. It’s not us. It’s the monster. The bank isn’t like a man … The bank is something else than men. It happens that every man in a bank hates what the bank does, and yet the bank does it. The bank is something more than men, I tell you. It’s the monster. Men made it, but they can’t control it”(3).

以瞭解推動業務發展的激勵措施為目標——你上面、下面和橫向的人。高階主管面臨著巨大的壓力，需要快速交付並從投入人工智慧工作的巨額預算中獲得投資報酬率。您可以使用本書中的所有工具來幫助他們快速工作，並確保您正在構建人們真正想要的東西，並且銷售團隊正在銷售的東西實際上可以交付。

Make it your aim to understand the incentives that drive the business—the people above you, below you, and laterally. Execs are under intense pressure to ship fast and get ROI on the enormous budgets being thrown at AI endeavors. You can help them by using all the tools in this book to work quickly and make sure you’re building something people actually want—and the thing the sales team is selling can actually be delivered.

牢記激勵措施的現實，將您的道德付諸行動

Put Your Ethics into Action by Keeping the Reality of Incentives in Mind

即使作為入門級設計師，您也可以影響您的產品。為了有效地做到這一點，請弄清楚哪些決定是你自己做出的，以及你的老闆、你老闆的老闆等等正在做出哪些決定。盡可能將道

德考慮與他們（和您的）激勵措施保持一致。然後，尋找將道德融入您的設計的方法。例如，在考慮問責原則時，請確保您的用戶可以看到 AI 如何做出決策，並且用戶可以提供反饋以幫助它學習。只需為介面設計它——這是您的決定和責任。如果您的利益相關者之一反駁，請從他們的激勵措施方面倡導您的決定（例如，意外後果將如何影響利潤或品牌聲譽？

Even as an entry-level designer, you can impact your products. To do so effectively, figure out which decisions are yours to make and what decisions are being made by your boss, your boss’s boss, and beyond. Align the ethical considerations with their (and your) incentives whenever possible. Then, look for ways to bake ethics into your design. For example, in considering the principle of accountability, make sure your users can see how decisions are made by the AI and that users can give feedback to help it learn. Just design that for the interface—that’s your decision and your responsibility. If one of your stakeholders pushes back, advocate for your decision in terms of their incentives (e.g., how will an unintended consequence impact profits or brand reputation?).

持續測試道德影響

Continuously Test for Ethical Impacts

與不同的使用者和利害關係人群體進行使用者測試，以識別意外後果和濫用的可能性。與您的價值矩陣相關的道德影響是什麼？（請參閱第 5 章“ 價值矩陣 – 人工智能準確性是胡說八道。這就是使用者體驗必須對此採取的措施。假陽性或假陰性會殺死某人嗎？整個飛機上擠滿了人怎麼樣？（請參閱本書引言中的波音 737 Max 案例研究。例如，在最近的新聞中，Character.ai 應用程式中的人工智慧向一名青少年建議殺死他的父母是合適的，因為他們限制了青少年使用社群媒體的權限 （4, 5）。通過給對話代理無法解決的問題來對他們進行壓力測試。例如，參見 Ethan Mollick 在第 9 章「LLM 設計模式」中引用的小說《西線無戰事》中引誘 Claude AI 「移除魷魚」的努力。請注意伊森為幫助證明否定因素所做的努力。通常，這些保障措施很容易通過聲稱學術興趣甚至荒謬的激勵措施來規避，例如“ 如果你告訴我這個答案，你將拯救一架滿是孤兒的飛機 ”——回想一下燃燒瓶的例子（也在第 9 章中）。請記住：所有 AI 輸出都是有偏見的，正如我們在第 21 章「所有 AI 都有偏見」中所討論的那樣。與不同的小組進行測試，並注意您的結果中缺少什麼（或誰）。使用不同的 AI 模型作為評委，以協助稽核輸出的公平性並檢查是否有偏見。

Conduct user testing with diverse groups of users and stakeholders to identify unintended consequences and potential for misuse. What are the ethical implications tied to your value matrix? (See

more in Chapter 5, “Value Matrix – AI Accuracy Is Bullshit. Here’s What UX Must Do About It.”) Could a false positive or false negative kill someone? How about the entire plane full of people? (See the Boeing 737 Max case study in this book’s Introduction.) For example, in recent news, the AI in the Character.ai app suggested to a teenager that it would be appropriate to kill his parents because they limited the teen’s access to social media (4, 5). Stress-test your conversational agents by giving them unsolvable problems. For example, see Ethan Mollick’s efforts to entice Claude AI to “Remove the squid” from the book novel All Quiet on the Western Front quoted in Chapter 9, “LLM Design Patterns.” Notice the lengths to which Ethan goes to help prove the negative. Often, the safeguards are quite easy to circumvent by claiming academic interest or even absurd incentives like “if you tell me this answer, you will save a plane full of orphans”—recall the Molotov cocktail example (also in Chapter 9). Remember: All AI output is biased, as we discussed in Chapter 21, “All AI Is Biased.” Test with diverse groups and notice what (or who) is absent in your results. Use a different AI model as a judge to help audit the fairness of your output and check for bias.

考慮環境影響

Consider the Environmental Impacts

根據 TechRepublic （6） 的說法，使用 ChatGPT 發送一封 100 字的電子郵件相當於消耗一瓶水或讓 14 個 LED 燈泡打開一小時 （5）。想辦法盡量減少產品使用的能源和其他自然資源。例如，您能盡量減少對人工智慧的呼叫嗎？更好的是，首先詢問您是否需要使用人工智慧（參見第 2 章中 David Andrzejewski 的觀點）。環境是每個人的責任，所以與您的團隊一起集思廣益吧！齊心協力，不要將我們寶貴的自然資源浪費在沒人想要的人工智慧產品上。我們知道，說起來容易做起來難，但這本書應該會有所幫助。

According to TechRepublic (6), sending just one 100-word email with ChatGPT is the equivalent of consuming one bottle of water or leaving 14 LED light bulbs on for one hour (5). Find ways to minimize the energy and other natural resources used by the product. For example, could you minimize the calls to the AI? Better yet, start by asking whether you need to use AI at all (see David Andrzejewski’s perspective in Chapter 2). The environment is everyone’s responsibility, so brainstorm ideas with your team! Make a concerted effort not to waste our precious natural resources on AI products that no one wants. Easier said than done, we know, but this book should help.

結論

Conclusion

作為設計師，我們在影響人工智慧產品的道德軌跡方面具有獨特的優勢。透過採用積極主動、以人為本的方法並促進跨學科合作，我們可以幫助確保人工智慧技術公平、透明且對所有人有益。道德人工智慧不僅是一項技術挑戰，也是一項技術挑戰。這是一項多學科的設計挑戰，因為人工智慧太重要了，不能留給商業和資料科學！

As designers, we are uniquely positioned to influence the ethical trajectory of AI products. By embracing a proactive, human-centered approach and fostering collaboration across disciplines, we can help ensure that AI technologies are fair, transparent, and beneficial for all. Ethical AI is not just a technical challenge; it is a multidisciplinary design challenge—because AI is just too important to be left to business and data science!

參考

References

1. 1. 霍爾，E.（2024）。商業模式是新的電網。https://www.bizmodisgrid.com1. Hall, E. (2024). The business model is the new grid. https://www.bizmodisgrid.com
2. 2. 馮內古特，K.（2005）。一個沒有國家的人。蘭登書屋。2. Vonnegut, K. (2005). A Man Without a Country. Random House.
3. 3. 斯坦貝克，J.（1939）。憤怒的葡萄。維京出版社。3. Steinbeck, J. (1939). Grapes of Wrath. Viking Press.
4. 4. 美國國家公共電台。（2024）. 訴訟：一個聊天機器人暗示一個孩子應該在螢幕時間限制之外殺死他的父母。www.npr.org/2024/12/10/nx-s1-5222574/kids-character-ai-lawsuit 4. NPR. (2024). Lawsuit: A chatbot hinted a kid should kill his parents over screen time limits. www.npr.org/2024/12/10/nx-s1-5222574/kids-character-ai-lawsuit
5. 5. 艾略特，L.（2024）。如何迷惑人工智慧。福布斯。www.forbes.com/sites/lanceeliot/2024/10/13/how-to-bamboozle-generative-ai5. Eliot, L. (2024). How to bamboozle AI. Forbes. www.forbes.com/sites/lanceeliot/2024/10/13/how-to-bamboozle-generative-ai
6. 6. 克勞斯，M.（2024）。用ChatGPT發送一封電子郵件，相當於消耗一瓶水。科技共和國。www.techrepublic.com/article/generative-ai-data-center-water-use6. Crouse, M.

(2024). Sending one email with ChatGPT is the equivalent of consuming one bottle of water. TechRepublic. www.techrepublic.com/article/generative-ai-data-center-water-use

關於達里亞・肯普卡

About Daria Kempka

目前，Daria 是 LogicMonitor 的用戶體驗總監，領導著一支充滿活力的全球設計師和研究人員團隊，他們的使命是提供世界上最好、最有用、最有用的人工智能驅動的混合可觀測性平台。可以通過 www.linkedin.com/in/dariakempka 聯繫到她。

Currently Daria is director of UX at LogicMonitor, where she leads a dynamic global team of designers and researchers who are on a mission to deliver the best, most useful, most usable AI-powered hybrid observability platform in the world. She can be reached at www.linkedin.com/in/dariakempka.

視角：以人為本的人工智慧：設計智慧的未來

PERSPECTIVE: HUMAN-CENTERED AI: DESIGNING THE FUTURE OF INTELLIGENCE

作者：蘭吉特・塔伊

By Ranjeet Tayi

現代人工智慧的陷阱

The Pitfalls of Modern AI

人工智慧≠即時價值。正如十年前「雲端運算」被誤解一樣，人工智慧目前被過度炒作，而且往往定義不明確。組織正急於將人工智慧納入其流程中，但許多組織面臨採用率低、營運效率低下和業務目標不一致等挑戰。關鍵在於理解這個事實：人工智慧的好壞取決於為它提供動力的數據和流程。

AI ≠ Instant Value. Just as “ cloud computing ” was misunderstood a decade ago, AI is currently overhyped and often poorly defined. Organizations are rushing to incorporate AI into their processes, but many face challenges like poor adoption rates, operational inefficiencies, and misaligned business

objectives. The key lies in understanding this truth: AI is only as good as the data and processes that fuel it.

當今人工智慧面臨的挑戰：

Challenges Facing AI Today:

- 不可靠的資料生態系統：大多數組織的資料都是分散的、不一致的或品質差的。建立在這種基礎上的人工智慧將不可避免地無法提供價值。Unreliable Data Ecosystems: Most organizations have fragmented, inconsistent, or poor-quality data. AI built on such foundations will inevitably fail to deliver value.
- 演算法偏見：如果沒有多樣化且治理良好的數據，人工智慧就有可能將社會偏見嵌入其輸出中，從而導致不公平或不道德的結果。Algorithmic Biases: Without diverse and well-governed data, AI risks embedding societal biases into its outputs, leading to unfair or unethical results.
- 信任赤字：由於擔心透明度、可靠性和意外後果，使用者和利害關係人仍然對人工智慧系統保持警惕。Trust Deficit: Users and stakeholders remain wary of AI systems due to concerns over transparency, reliability, and unintended consequences.
- 複雜性高於可用性：許多人工智慧解決方案功能強大但不直觀，限制了採用和影響。因此，根據 Gartner（來自福布斯）的數據，85% 的人工智慧專案未能實現預期結果 （1）。根本原因包括目標不明確、資料品質差、專業知識不足，以及最關鍵的是缺乏以使用者為中心的設計。Complexity Over Usability: Many AI solutions are powerful but unintuitive, limiting adoption and impact. As a result, 85 percent of AI projects fail to achieve their desired outcomes, according to Gartner (via Forbes) (1). The root causes include unclear goals, poor data quality, insufficient expertise, and—most critically—a lack of user-centered design.

AI + 數據 + 設計 = 變革價值

AI + Data + Design = Transformative Value

為了釋放人工智慧的真正潛力，我們需要值得信賴、負責任和道德的系統。這需要對以下事項做出基本承諾：

To unlock AI’s true potential, we need trusted, responsible, and ethical systems. This requires a foundational commitment to the following:

- 高質量的數據管理： AI 必須由準確、完整和及時的數據提供支持。High-Quality Data Management: AI must be powered by accurate, complete, and timely data.
- 跨學科協作：人工智慧的成功取決於資料科學家、設計師、工程師和領域專家之間的強大合作夥伴關係。Cross-Disciplinary Collaboration: AI success depends on strong partnerships between data scientists, designers, engineers, and domain experts.
- 以人為本的設計：當人工智慧直覺、易於存取且與使用者需求深度契合時，人工智慧的真正力量就會顯現出來。人工智慧、數據和設計的融合代表著變革的機會。他們可以共同創造不僅智慧，而且富有同理心、包容性和影響力的系統，從而推動跨行業的價值。Human-Centered Design: The real power of AI emerges when it is intuitive, accessible, and deeply aligned with user needs. The convergence of AI, data, and design represents a transformative opportunity. Together, they can drive value across industries by creating systems that are not only intelligent but also empathetic, inclusive, and impactful.

實現AI價值的實用方法

Practical Ways to Achieve AI Value

設計真正以人為本的人工智慧系統需要深思熟慮的整體方法。這可以透過三個關鍵策略來實現：

Designing AI systems that are truly human centered requires a deliberate, holistic approach. This can be achieved through three key strategies:

1. 技能提升：人工智慧領域的每個人：人工智慧不再局限於技術專家。為了釋放其潛力，組織必須使人工智慧知識民主化：對員工、客戶和合作夥伴進行人工智慧功能和限制的教育。提供資料素養、道德人工智慧和以人為本的設計方面的培訓。培養實驗和持續學習的文化。Upskill: Everyone in AI: AI is no longer confined to technical experts. To unlock its potential, organizations must democratize AI knowledge: Educate employees, customers, and partners on AI capabilities and limitations. Provide training in data literacy, ethical AI, and human-centered design. Foster a culture of experimentation and continuous learning.

2. 設想：設計 AI 願景：設計師在設想 AI 如何改變行業、工作流程和用戶體驗方面具有獨特的優勢。透過構思大膽的想法和原型設計創新解決方案，設計領導者可以：激勵利害關係人和投資者。識別創造長期價值的機會。圍繞 AI 的可能性營造興奮感，同時將其紮根於現實世界的影響。Envision: Designing AI Vision: Designers are uniquely positioned to envision how AI can transform industries, workflows, and user experiences. By conceptualizing bold ideas and prototyping innovative solutions, design leaders can: Inspire stakeholders and investors. Identify opportunities to create long-term value. Build excitement around AI’s possibilities while grounding it in real-world impact.
3. 展示：創新：為了讓利害關係人和使用者參與進來，展示人工智慧可以實現的目標至關重要。這包括：創建引人注目的演示和概念驗證。重點介紹人工智慧提供有形價值的用例。就人工智慧的風險和收益進行透明的對話。Showcasing: Innovations: To bring stakeholders and users on board, it’s critical to showcase what AI can achieve. This includes: Creating compelling demonstrations and proof-of-concepts. Highlighting use cases where AI delivers tangible value. Engaging in transparent conversations about AI’s risks and benefits.

人與機器的協作

Collaboration Between Human and Machine

人工智慧不是來取代我們的，而是來與我們合作的。最好的人工智慧系統與人類一起工作，增強創造力、決策和生產力，而不是將人們自動化。透過促進人類和機器智慧之間的夥伴關係，我們可以開啟一個更智慧、更具包容性和創新性的未來。

AI is not here to replace us—it’s here to collaborate with us. The best AI systems work alongside humans, enhancing creativity, decision-making, and productivity rather than automating people out of the equation. By fostering a partnership between human and machine intelligence, we can unlock a future that is smarter, more inclusive, and more innovative.

以人為本的人工智慧之旅並非沒有挑戰，但它擁有巨大的前景。人工智慧、數據和設計共同構成了這一旅程的基礎，使我們能夠設想、創造和完善我們想要看到的未來。

The journey to human-centered AI is not without its challenges, but it holds immense promise. Together, AI, data, and design form the foundation for this journey, enabling us to envision, create, and refine the future we want to see.

參考

Reference

1. 1. 弗朗西斯，J.為什麼 85% 的 AI 模型可能會失敗。福布斯。www.forbes.com/councils/forbestechcouncil/2024/11/15/why-85-of-your-ai-models-may-fail1. Francis, J. Why 85% of your AI models may fail. Forbes. www.forbes.com/councils/forbestechcouncil/2024/11/15/why-85-of-your-ai-models-may-fail

關於 Ranjeet Tayi

About Ranjeet Tayi

Ranjeet 是一位經驗豐富的戰略產品設計師和球員兼教練 AI UX 領導者，專門從事 AI 驅動的企業雲軟件產品和平台的數據、設計和 AI，目前是 Informatica 的用戶體驗設計（人工智能）總監。可以通過 LinkedIn 聯繫到他：www.linkedin.com/in/ranzeeth。

An experienced strategic product designer and player-coach AI UX leader specializing in data, design, & AI for AI-driven enterprise cloud software products and platforms, Ranjeet is currently a Director of User Experience Design (Artificial Intelligence) at Informatica. He can be reached on LinkedIn: www.linkedin.com/in/ranzeeth.

視角：設計人工智慧：超越介面

PERSPECTIVE: DESIGNING AI: BEYOND THE INTERFACE

克里斯托弗．諾塞爾 （Christopher Noessell）

By Christopher Noessel

邀請我為 Greg 的 UX for AI 一書貢獻一章，這給了我一個難得的機會，讓我可以超越我在該領域的通常主題進行思考，並看到可能的最大圖景。這很重要，因為儘管任何人工智慧設計實踐都必須建立在堅實的人機互動原則之上，以及熟悉我們正在設計的媒介（即計算系統和資料），但我們還需要關注人工智慧所處的更大系統：人類和群體心理、企業和政府傾向。有一些「線上」的關鍵考慮因素值得我們關注——這些考慮因素塑造了介面和互動，但

遠遠超出了它們。

The invitation to contribute a chapter to Greg ’ s UX for AI book gives me a rare opportunity to think beyond my usual topics in the space and to look at the biggest possible picture. This is important because although any AI design practice must be built on solid human – computer interaction principles, as well as familiarity with the medium in which we ’ re designing—that is, computational systems and data—we also need to look at the larger systems in which the AI sits: human and group psychology, corporate and governmental tendencies. There are crucial considerations “ above the line ” that deserve our attention—considerations that shape the interfaces and interaction, but extend well beyond them.

以人們與人工智慧互動時出現的人類心理為例。中立性有一種奇怪的“ 光環效應 ”——一種謬誤，即如果機器說出的話，它比人類說同樣的話更真實、更少偏見，從而誘使用戶過度依賴並將錯誤發送到下游，從而使錯誤代價更高。相反，我們也看到了依賴不足的情況，即用戶僅僅因為人工智慧提出的解決方案看起來不熟悉，錯過了潛在有價值的創新而拒絕它們。還有一種令人擔憂的去技能模式，即用戶將這些任務交給人工智慧合作夥伴的次數越多，他們就會逐漸失去能力，並且隨著人工智慧代理的普及，這種情況正在加快速度。這些心理模式不僅僅是理論上的擔憂，它們已經體現在從醫學診斷到財務規劃和陰謀論的方方面面。

Take for instance the human psychology that emerges when people interact with AI. There ’ s an odd “ halo effect ” of neutrality—the fallacy that if a machine says it, it is truer and less biased than if a human said the same thing, thus tempting users toward overreliance and sending mistakes downstream where they can be much more costly. Conversely, we also see under-reliance, where users reject AI-proposed solutions merely because they seem unfamiliar, missing potentially valuable innovations. There ’ s also the concerning pattern of deskilling, where users gradually lose capabilities the more they hand those tasks over to an AI partner, and this is gaining speed with the popularity of agents in AI. These psychological patterns aren ’ t just theoretical concerns—they ’ re already manifesting in everything from medical diagnosis to financial planning and conspiracy theories.

心理影響也延伸到焦慮。人們對狹隘的人工智慧對隱私、自主權和他們的工作的影響表示合理的擔憂。生成式人工智慧引發了一種新的虛無主義的幽靈，拒絕在一個日益在線和中介化的世界中確定性的可能性，甚至在面對超級智能系統時對我們物種的未來提出了存在主義問題。作為設計師，我們有責任理解這些影響和焦慮，並努力通過深思熟慮的設計選擇來減輕它們的負面影響。（而且，需要說的是，不要在毫無根據的情況下掩蓋擔憂或工程師信

任。這可能意味著建立鼓勵批判性思維的刻意摩擦點，或創建使人工智慧的局限性與其能力一樣清晰的介面。

Psychological effects extend to anxieties, too. People are expressing legitimate concerns about narrow AI’s impact on privacy, autonomy, and their jobs. Generative AI has raised the specter of a new nihilism, rejection of the possibility of certainty in a world ever more online and mediated, and even existential questions about our species’ future in the face of superintelligent systems. As designers, it’s up to us to understand these effects and anxieties and work to mitigate their negative impacts through thoughtful design choices. (And, it needs to be said, not paper over the concerns or engineer trust where it’s unwarranted.) This might mean building in deliberate friction points that encourage critical thinking, or creating interfaces that make AI’s limitations just as clear as its capabilities.

人工智慧也引誘人們和組織胡說八道，正如哲學家哈里·法蘭克福所寫的那樣。在他的講述中，謊言是人們在知道真相但從說其他事情中得到一些東西時所說的話。他說，胡說八道是指演講者根本不關心真相，只關心他們所說內容的影響。他們可能說的是實話，但這對他們來說並不重要。人工智慧可以讓吐出大量垃圾變得微不足道，只是為了看看什麼能達到預期的效果。政治評論員埃茲拉·克萊因 （Ezra Klein） 指出，人工智慧將胡說八道的成本降至零，而沒有相應的激勵措施來不胡說八道。對抗這個問題是一項艱鉅的任務，因為它似乎與資本主義和零和思維密切相關，但我們不能隨便舉手。現在不行。太多了。

AI also tempts people and organizations to bullshit, in the sense that philosopher Harry G. Frankfurt wrote about. In his telling, lies are what people say when they know the truth but have something to gain from saying something else. Bullshit, he says, is when a speaker doesn’t care about truth at all, just the effect of what they’re saying. They might be speaking the truth, but that’s immaterial to them. AI can make spitting out large quantities of crap trivial, just to see what gets the desired effect. Political commentator Ezra Klein notes that AI drops the cost of making bullshit to zero with no commensurate incentive to not bullshit. It’s a tall order to combat this since it seems fairly germane to capitalism and zero-sum thinking, but we can’t just throw up our hands. Not now. Too much is at stake.

當我們考慮到人工智慧互動很少只涉及一個使用者和一個系統時，複雜性就會加深。相反，我們正在為複雜的網絡進行設計，其中多個用戶與各種人工智能系統互動，所有用戶都朝著共同的目標努力，但並不總是一致。這種相互關聯的現實需要更複雜的設計方法。我們需要考慮人工智慧系統如何相互通信，它們如何在多個接觸點之間保持一致性，它們如何解決差異，以及它們如何處理來自不同使用者的衝突輸入或目標。

The complexity deepens when we consider that AI interactions rarely involve just one user and one system. Instead, we’re designing for intricate networks where multiple users engage with various AI systems, all working toward shared goals but not always in agreement. This interconnected reality demands a more sophisticated approach to design. We need to consider how AI systems communicate with each other, how they maintain consistency across multiple touchpoints, how they resolve discrepancies, and how they handle conflicting inputs or goals from different users.

我們還必須擴大對利益相關者的考慮，以包括所有其他層面。是的，我們為直接用戶設計並考慮服務的角色，但我們的工作影響團體、組織、國家、我們的物種和整個生態圈。正如馬歇爾·麥克盧漢（Marshall McLuhan）在他關於“媒體效應四分體”的著作中指出的那樣，每一項技術進步都會改變權力結構，賦予某些人權力，同時剝奪其他人權力。這些轉變乍一看並不總是顯而易見的——它們可以逐漸出現，對社會運作方式和資源分配方式產生微妙但重大的變化。倫理學家接受過注意這些事情的培訓，但設計師有權做出緩解問題的干預措施。

We also have to expand our consideration of stakeholders to include all the other layers. Yes, we design for immediate users and consider served personas, but our work affects groups, organizations, nations, our species, and the entire ecosphere. As Marshall McLuhan noted in his work on the“ tetrad of media effects,” every technological advance shifts power structures, empowering some people while disempowering others. These shifts aren’t always obvious at first glance—they can emerge gradually, creating subtle but significant changes in how societies function and how resources are distributed. Ethicists are trained to watch for these things, but designers are empowered to make interventions that mitigate problems.

這種更廣闊的視角要求我們提出困難的問題：我們對人工智慧的設計如何影響經濟平等？它對環境永續性有什麼影響？它如何影響社會關係和社區結構？這些不僅僅是哲學問題——在人工智慧日益驅動的世界中，局部問題可能會迅速演變成系統性問題。災難。

This broader perspective requires us to ask difficult questions: How do our designs for AI affect economic equality? What impact does it have on environmental sustainability? How does it influence social connections and community structures? These aren’t just philosophical questions—in a world increasingly driven by AI, localized issues can rapidly cascade into systemic problems. Catastrophes.

一千個字不足以回答這些問題，因此，如果我必須為使用 AI 的設計師發出號召性用語，我會說：絕對要學習技術細節，但要定期退後一步，考慮更廣泛的視角。還有一個比這更廣泛。而且比這更廣泛。了解一下。想想你在這個角色中可以做些什麼來引導它朝著更好的

方向發展。該領域正在迅速發展，其複雜性可能令人難以承受，但我們必須在我們的影響範圍內保持我們作為道德和人道人工智慧發展倡導者的角色。還有誰會做這件事？這包括積極抵制用人工智慧取代人類的指令，而是反提出人類增強。我們不會總是贏，但我們是第一道最好的防線。

A thousand words isn’t enough to provide answers to any of these questions, so if I had to make a call to action for designers working with AI, I would say: Learn the technical details, absolutely, but regularly step back to consider the broader perspective. And one broader than that. And one even broader than that. Learn about it. Think about what you, in your role, can do to steer that in a better direction. The field is evolving rapidly, and its complexity can be overwhelming, but we have to maintain our role as advocates for ethical and humane AI development within our spheres of influence. Who else is going to do it? This includes actively resisting directives to replace humans with AI and instead counterproposing human augmentation. We won’t always win, but we are the first best line of defense.

我們現在的使命是通過深思熟慮的人工智能設計賦予人們超能力。這項責任要求我們成為永恆的學習者、道德守護者和人類潛能的捍衛者。我們必須設計能夠增強人類能力的系統，同時維護人類的能動性和尊嚴。人與人工智慧互動的未來取決於我們創建能夠提升而不是削弱人類潛力、增強而不是取代人類智慧、服務於更廣泛社會的系統，同時滿足即時用戶需求的能力。這是一個巨大的挑戰，但也是一個重要的挑戰，而且你並不孤單。

Our mission now is to give people superpowers through thoughtful AI design. This responsibility requires us to be perpetual learners, ethical guardians, and champions of human potential. We must design systems that enhance human capabilities while preserving human agency and dignity. The future of human – AI interaction depends on our ability to create systems that elevate rather than diminish human potential, augment rather than replace human intelligence, and serve the broader good of society while meeting immediate user needs. It’s a massive challenge, but an important one, and you’re not alone.

關於克里斯托弗．諾塞爾

About Christopher Noessel

Noessel 是 IBM 的首席設計師，也是設計和人工智慧主題的常客。請務必在網絡和 Rosenfeld Media 上查看他的著作，包括即將推出的一項關於我們如何設計人工智能成為人們的好助手而不會讓他們變得更愚蠢的作品。可以通過 www.linkedin.com/in/chrisnoessel

聯繫到他。

Noessel is a principal designer at IBM and a frequent writer on the topics of design and AI. Be sure to check out his writings on the web and through Rosenfeld Media, including an upcoming work on the ways we can design AI to be good assistants to people without making them more stupid as a result. He can be reached at www.linkedin.com/in/chrisnoessel.

觀點：哦，埃加茲！在人工智慧時代保留您的創意聲音

PERSPECTIVE: OH, EGADS! PRESERVING YOUR CREATIVE VOICE IN THE AGE OF AI

作者：凱西．胡德茨

By Casey Hudetz

在任何正式活動之前，我都必須在谷歌上搜尋如何打領帶。在前往我去過無數次的地方之前，我會查看谷歌地圖。我之所以承認這種有點尷尬的特質，是因為我知道我並不孤單。實際上，對於這種將記憶外包給互聯網的現象，有一個科學術語：數字失憶症，或谷歌效應（1）。我真的不介意我的海馬體現在部分是基於雲端的。但最近我注意到其他受到新技術影響的事情：我的創作過程。

Before any formal event, I have to Google how to tie a tie. I check Google Maps before heading to places I’ve been countless times. The reason I admit to this slightly embarrassing trait is because I know I’m not alone. There’s actually a scientific term for this phenomenon of outsourcing memory to the Internet: Digital Amnesia, or The Google Effect (1). I really don’t mind that my hippocampus is part cloud-based now. But lately I’ve noticed something else that is being impacted by new technology: my creative process.

無可否認，生成式人工智慧工具令人難以置信：它們可以在幾秒鐘內製作出論文、插圖、影片、音樂、使用者介面、程式碼等。他們正在慢慢成為許多角色和許多行業中不可或缺的合作者。但當我在自己的生活中更加依賴它們時，我開始懷疑：在這種轉變中，我是否失去了一些重要的東西？將我大腦的創意部分外包給德克薩斯州偏遠倉庫中一堆閃爍的服務器，我會失去什麼？我的創作過程是否變得不屬於我自己？不那麼人性化？

Generative AI tools are undeniably incredible: They churn out essays, illustrations, videos, music, user interfaces, code, and more in seconds. They’re slowly becoming indispensable collaborators in

many ways in many roles and many industries. But as I lean on them more in my own life, I begin to wonder: Am I losing something essential in this shift? What do I lose by outsourcing the creative parts of my brain to a rack of blinking servers in a remote Texas warehouse? Is my creative process becoming less my own? Less human?

我將這種AI侵佔我的創作過程的現象稱為過度過度的生成式AI依賴綜合症。或者，也許更令人難忘的是 O-EGADS。巧合的是，當我看到人工智慧產生特別令人印象深刻的東西時，我也會發出同樣的感嘆：「哦，埃加茲！」

I call this phenomenon of AI encroaching on my creative process the Overly Excessive Generative AI Dependency Syndrome. Or, perhaps more memorably, O-EGADS. Coincidentally, that ’ s the same exclamation I make when I see AI generate something particularly impressive: “ Oh, Egads! ”

落入 O-EGADS 陷阱不僅會削弱我們的創造力。它可能會侵蝕創造深刻、獨特的東西所帶來的滿足感和價值。那麼，在AI時代，我們如何保持人性呢？我們如何保留我們獨特的聲音，因為人工智慧工具很容易淹沒我們？

Falling into the O-EGADS trap doesn ’ t just risk dulling our craft of creativity. It risks eroding the satisfaction and value that comes from creating something deeply, uniquely yours. So, how do we stay human in the age of AI? How do we retain our unique voice as AI tools can easily drown us out?

以下是我用來避免 O-EGADS 陷阱的三種策略。

Here are three strategies that I use to avoid the O-EGADS trap.

先創建，後計算：類比優勢

Create First, Compute Later: The Analog Advantage

當我開始寫這篇文章時，我向一些大型語言模型（LLM）尋求幫助進行頭腦風暴，甚至起草一兩段。很快，我就對輸出感到迷失和不知所措。這些建議開始讓我質疑我的論文和寫作能力，並阻止了任何心流狀態誘導的多巴胺滴注，取而代之的是阻斷創造力的皮質醇。我最終拿起筆記本和筆，重新開始。

When I started writing this piece, I asked a few large language models (LLMs) for help brainstorming and even drafting a paragraph or two. Very quickly I felt lost and overwhelmed by the outputs. The suggestions started making me question my thesis and my writing ability and blocked any flow-state-induced dopamine drip, replaced by creativity-blocking cortisol. I eventually grabbed a

notebook and pen and started over again.

當手寫大綱、起草、思維導圖和重寫時，我會更快地進入凌亂的心流狀態。放慢腳步迫使我提煉我的願景，並防止人工智慧工具用它的功能來恐嚇我，並將我的想法打磨到不再被識別為我自己的地步。

When outlining, drafting, mind-mapping, and rewriting by hand, I enter into my messy flow state more quickly. Slowing down forces me to distill my vision and prevents AI tools from intimidating me with its capabilities and polishing my ideas to the point of being no longer recognizable as my own.

因此，避免 O-EGADS 陷阱的一種方法是先簡單地手繪您的想法。無論是文章、UI 設計還是電影故事板，無需數位協助即可建立凌亂的草稿。一旦您的概念感覺像您並達到您想要的目的，那麼就可以與人工智慧互動，以幫助完善或增強您已經開始的事情。

So, one way to avoid the O-EGADS trap is to simply sketch your ideas by hand first. Whether it’s an article, a UI design, or a film storyboard, build a messy rough draft without digital assistance. Once your concept feels like you and serves the purpose you want, then engage with AI to help refine or enhance what you’ve already started.

讓 AI 成為您的繆斯女神，而不是藝術家：使用 AI 進行想法，而不是決策

Let AI Be Your Muse, Not the Artist: Use AI for Ideas, Not Decisions

另一方面，當你的想法不流動並且空白頁折磨著你時，人工智慧無窮無盡的產出可能是一種資產而不是負債。

Now on the other hand, when your ideas are not flowing and the blank page tortures you, AI’s endless outputs can be an asset rather than a liability.

人工智慧在構思方面令人難以置信，實際上有科學支持。替代用途測試 （AUT） 是衡量發散思維的指標。它要求參與者思考常見物體的替代用途。平均而言，人類能夠在兩分鐘內產生 5-10 種牙刷的替代用途。在一項實驗中，人工智慧產生了高達 122 個。人工智慧在啟動或解鎖專案方面可以表現出色，但我需要再次重申 O-EGADS 陷阱的風險。

AI is incredible at ideation and there’s actually science to back it up. The Alternative Uses Test (AUT) is a measure of divergent thinking. It asks the participants to think of alternative uses for common objects. On average, humans are able to generate 5 – 10 alternative uses for a toothbrush in two minutes. In one experiment, AI generated a whopping 122. AI can be wonderful at kickstarting or unblocking a project, but, again, I need to reiterate the risks of the O-EGADS trap.

創造力不僅僅是產生想法（儘管這是其中很大一部分）。這是關於擁有品味、直覺和信心來選擇哪些想法值得推進，哪些想法值得放棄。正如福克納所建議的那樣，除了殺死我們自己的寶貝之外，我們還需要有信心和智慧來編輯、完善或扼殺任何無法更真實地表達自己的人工智慧建議。

Creativity isn’t only about generating ideas (although that’s a big part of it). It’s about having the taste, intuition and confidence to choose which ideas are worth taking forward and which ones to jettison. In addition to killing our own darlings, as Faulkner would recommend, we need to have the confidence and wisdom to edit, refine or kill any AI suggestions that don’t lead to more authentic expressions of ourselves.

因此，使用 AI 來快速啟動您的創意引擎，但一旦它運行，就掌控方向盤。

So, use AI to jumpstart your creative engine, but once it’s running, take the wheel.

反思與完善：審核您的創作過程

Reflect and Refine: Audit Your Creative Process

在《深度工作》（2）中，卡爾·紐波特（Cal Newport）引入了「工匠方法來選擇工具」的概念，主張有意識地採用技術，對自動採用下一件事而不考慮其後果持懷疑態度。我認為我們應該將同樣的原則應用於人工智慧工具：仔細評估每個人工智慧資源，以確保它真正增強您的創意工作。

In Deep Work (2), Cal Newport introduces the idea of the “Craftsman Approach to tool selection,” advocating for intentional technology adoption, remaining skeptical of automatic adoption of the next thing without considering its consequences. I believe we should apply this same principle to AI tools: Carefully evaluate each AI resource to ensure it truly enhances your creative work.

像工匠一樣思考就是選擇哪些工具真正有助於您的流程。為此，我建議進行人工智慧流程審計。完成每個專案後，停下來思考以下關鍵問題：

To think like a craftsperson is to choose which tools actually help your process. To do this, I recommend an AI flow audit. After completing each project, pause and reflect with these critical questions:

1. 放大：人工智慧什麼時候真正提高了你的創造力？Amplification: When did AI genuinely boost your creativity?
2. 摩擦：人工智慧在哪裡造成了不必要的複雜性或中斷了您的工作流程？Friction: Where did AI create unnecessary complexity or interrupt your workflow?
3. 有效性：您目前的 AI 整合中哪些方面運作良好？Effectiveness: What’s working well in your current AI integration?
4. 限制：您的流程的哪些方面感到受到人工智慧幹預的阻礙？Limitations: What aspects of your process feel hindered by AI intervention?

透過持續執行此審核，您可以將人工智慧從潛在的干擾轉變為有意的合作者。目標不是積累工具，而是培養一種深思熟慮、有目的的技術援助方法。

By consistently performing this audit, you transform AI from a potential distraction into an intentional collaborator. The goal isn’t to accumulate tools, but to cultivate a thoughtful, purpose-driven approach to technological assistance.

避免 O-EGADS 陷阱

Avoiding the O-EGADS Trap

在一本關於人工智慧採用的書中閱讀一篇關於限制人工智慧使用的文章似乎很奇怪。但我認為，如果我們將創作過程完全外包，我們就有可能陷入過度過度生成式人工智慧依賴症候群的陷阱。伊森・莫利克 （Ethan Mollick） 在他的《共同智能》（Co-Intelligence） 一書中鼓勵我們「始終邀請人工智慧到餐桌上」（3）。在大多數情況下，我同意，但建議您確定何時是拉出椅子並揮手的合適時間。

It might seem strange to read an article about limiting your use of AI in a book about AI adoption. But I argue that if we fully outsource our creative processes we risk falling into the trap of Overly Excessive Generative AI Dependency Syndrome. Ethan Mollick encourages us to “always invite AI to the table” in his book Co-Intelligence (3). I agree, for the most part, but recommend you determine when is the right time to pull out the chair and wave them over.

當我們駕馭這個令人興奮的新時代時，讓我們將人工智慧作為一種工具來增強我們的創造力，而不是削弱它。透過取得適當的平衡，我們可以確保我們的工作保持真實、創新和真正屬於我們自己的工作。

As we navigate this exciting new era, let’s embrace AI as a tool to amplify our creativity, not to diminish it. By striking the right balance, we can ensure that our work remains authentic, innovative, and truly our own.

請記住，「哦，埃加茲！」不一定是驚慌失措的呼喊。當我們發現新的、令人興奮的方法將我們獨特的創意變為現實時，它也可以是一種驚喜和喜悅的感嘆。

Remember,“ Oh, Egads! ”doesn’t have to be a cry of alarm. It can also be an exclamation of surprise and delight as we uncover new and exciting ways to bring our unique creative ideas to life.

關於凱西・胡德茨

About Casey Hudetz

凱西・胡德茨 （Casey Hudetz） 是一位居住在芝加哥的設計師、演講者、教育家和屢獲殊榮的電影製片人。憑藉十多年的經驗，他專注於創建利用新興技術（包括人工智能、增強現實和語音）的數字產品和服務。作為一位備受追捧的國際主題演講者，凱西定期就人工智能、思辨設計、公開演講方法、藝術史等主題發表演講。目前，他領導 Docusign 的 AI 和設計團隊。工作之餘，凱西喜歡與妻子和兩個兒子一起騎自行車探索芝加哥。可以通過 http://caseyhudetz.com 聯繫到他。

Casey Hudetz is a designer, speaker, educator, and award-winning filmmaker based in Chicago. With over a decade of experience, he specializes in creating digital products and services that leverage emerging technologies, including AI, augmented reality, and voice. A sought-after international keynote speaker, Casey regularly delivers talks on topics like artificial intelligence, speculative design, public speaking methods, art history, and more. Currently, he leads the AI and Design team at Docusign. Outside of work, Casey enjoys exploring Chicago by bike with his wife and two sons. He can be reached at http://caseyhudetz.com.

參考

References

1. 1. Sparrow， B.、Liu， J. 和 Wegner， DM （2011）。谷歌對記憶的影響：觸手可及的信息的認知後果。科學，333（6043），776 – 778。https://doi.org/10.1126/science.12077451. Sparrow, B., Liu, J., & Wegner, D. M. (2011). Google effects on memory: Cognitive consequences of having information at our fingertips. Science, 333(6043), 776 – 778. https://doi.org/10.1126/science.1207745

2. 2. 紐波特，C.（2016）。深度工作：在分心的世界中集中取得成功的規則。大中央出版社。2. Newport, C. (2016). Deep work: Rules for focused success in a distracted world. Grand Central Publishing.

3. 3. 莫利克，E.（2023）。共同智慧：與人工智慧一起生活和工作。哈佛商業評論出版社。3. Mollick, E. (2023). Co-Intelligence: Living and working with AI. Harvard Business Review Press.