Il suffit d'une simple photo trouvée sur un réseau social pour créer une image pornographique. Ce sont les femmes qui sont les principales cibles de ces montages, constate ce quotidien polonais, qui dénonce un vide juridique.

—Gazeta Wyborcza, *extraits (Varsovie)*

Les produits du *deep porn* (un montage photographique ou vidéo très réaliste dans lequel le visage d'une personne est collé sur un corps nu issu d'un film pornographique ou d'une photo érotique) inondent le web depuis des mois. Mais un cap vient d'être franchi, qui rend leur production encore plus simple : désormais, une simple application sur smartphone suffit.

"Ce week-end, j'ai vu passer une publicité pour une application de photo stripping *sur Twitter. Ce contenu était recommandé aux personnes s'intéressant à l'IA. Un peu plus tard, lorsque j'ai publié un tweet indiquant que j'avais écrit à la Commission européenne à ce sujet, un homme a décidé de modifier ma photo grâce à cette application. Il ne m'a laissé qu'un maillot de bain et l'a postée sur Twitter. J'ai décidé de supprimer le message"*, témoigne la professeure Aleksandra Przegalinska, chercheuse en développement de l'IA, actuellement associée à l'université Harvard. L'application en question est l'une des douzaines créées récemment pour *"déshabiller qui vous voulez en un seul clic"*. Impossible de savoir combien il en existe exactement. Il suffit de taper la phrase adéquate dans le moteur de recherche de Google, pour ne citer que lui, et une liste de sites web et d'applications grâce auxquels il est possible de créer des faux nus à partir de photos apparaît.

Comment fonctionnent ces applications ? Il suffit d'une photo de silhouette, ou du moins d'une partie de celle-ci. Si vous sélectionnez l'option "se déshabiller", l'IA génère l'image d'un corps nu correspondant à la silhouette de la photo originelle. Celle-ci n'a cependant pas grand-chose à voir avec ce à quoi la personne ressemble en réalité quand elle est nue. Car l'IA n'a pas la capacité de voir mieux qu'un humain. Elle élabore juste un corps fictif à partir d'une photo qu'elle a déjà vue et grâce à laquelle elle a appris à prédire à quoi ressemble une personne une fois nue.

"Ce que montre l'application, ce ne sont pas les corps des personnes ciblées, mais un modèle prédictif qui prolonge ce qui est visible sur la photo en prenant comme exemple d'autres photos nues avec lesquelles elle a été alimentée. Et ces créations semblent attrayantes", poursuit la spécialiste en intelligence artificielle. Les corps "déshabillés" dans les applications seront non seulement faux, mais aussi contre nature. Mais ce n'est pas tout.

↑ *Dessin de* **Marysia Machulska** *pour* **Courrier International,** *Pologne.*

Contraction de "deep learning" et de fake, "hypertrucage" en français. C'est un contenu falsifié (image, vidéo, audio). L'IA peut être utilisée pour superposer un visage ou une voix sur un contenu existant.

AUCUNE RÉGLEMENTATION

Le manque de contrôle des créateurs de ces applications constitue une menace bien plus importante, car elles permettent de créer des *deepfakes* et des outils dangereux sans aucun consentement. Il n'existe aucune base légale pour contrôler leurs activités. Actuellement, en Pologne, le droit ne régit pas les principes d'utilisation de l'IA.

"Aux États-Unis, un décret a déjà été adopté pour interdire la discrimination et le harcèlement moral à l'aide d'une IA, ce qui inclut des comportements tels que celui dont j'ai été victime, ainsi que la dégradation de l'image, pour lesquels nous avons des dispositions dans la loi polonaise, précise Aleksandra Przegalinska. *Mais* → 18

17 ← *cela reste insuffisant. Nous attendons depuis trop longtemps des solutions de l'Union européenne, alors que des restrictions légales ont déjà été adoptées au Canada et aux États-Unis.*"

Selon l'étude réalisée par Sensity IA, 96 % des *deepfakes* créés par intelligence artificielle relèvent de la pornographie. Et 99 % des contenus concernent des femmes. *"Cet outil sert avant tout à déshumaniser les femmes. Il montre en même temps à quel point l'idée de consentement éclairé est fragile, car il suffit d'avoir accès à la technologie pour contourner la nécessité d'obtenir le consentement de l'autre et créer de la pornographie l'impliquant"*, souligne Gabe Wilczynska, de l'association Bez, qui s'occupe, entre autres, de lutter contre les violences sexuelles.

"REVENGE PORN"

"Ce phénomène est également associé à la pédophilie. Mais ces outils ciblent principalement les femmes", poursuit Gabe Wilczynska. Se venger d'un ou d'une ancienne partenaire en utilisant du faux matériel pornographique avec son image est devenu particulièrement populaire pendant la pandémie, lorsque la technologie était souvent le seul moyen d'exprimer ressentiment et colère. Le phénomène a été appelé *revenge porn* ["la vengeance par la pornographie"]. Très souvent, la production de telles contrefaçons vise aussi à discréditer la victime.

Selon *The Washington Post*, depuis janvier 2023, les 10 générateurs de photos de nu les plus populaires ont été à l'origine de plus de 415 000 clichés. Depuis 2018, le nombre de ces photographies produites artificiellement a augmenté de 280 %. Une simple recherche Google permet de les trouver.

"C'est un phénomène qui nécessite une réaction rapide. La Commission européenne débat de la nécessité de réglementer l'utilisation de l'intelligence artificielle dans la reconnaissance faciale, mais l'IA qui génère une photo de vous nue devrait être totalement interdite dès que possible, s'indigne Aleksandra Przegalinska. *La publicité pour l'alcool est interdite [en Pologne], mais lorsque vous surfez sur Internet vous pouvez tomber sur une publicité pour une application permettant de créer de la pornographie illégale."*

Et l'experte d'alerter : *"Cela signifie la mort civile des femmes. Le mépris, la dépréciation. Il faut s'attendre à encore plus de harcèlement en ligne. L'existence de tels outils est désastreuse."*

Maria Korcz,
publié le 7 novembre 2023

GAZETA WYBORCZA

Varsovie, Pologne
Quotidien
wyborcza.pl

Fondée en 1989, "La Gazette électorale" est le plus grand quotidien de Pologne. Elle promeut une approche libérale, tolérante et européenne pour les grands choix de société.

Un coach à la carte

Lumin Fitness se targue d'avoir les meilleurs entra Mais ils n'existent pas physiquement. Dans cette de sport qui a ouvert en septembre 2023 au Texa ce sont des intelligences artificielles qui accomp les sportifs dans leur entraînement. Visite guidée

—MIT Technology Review *Cambridge (États-Unis)*

Comme toute salle de sport qui se respecte, Lumin Fitness se targue d'avoir les meilleurs coachs. La jeune et énergique Chloé promet de vous aider à pulvériser vos objectifs. Rex, très carré, aux airs de sergent instructeur, encourage ses clients à donner le meilleur d'eux-mêmes, tout en leur rappelant qu'il faudra souffrir. Si vous cherchez une méthode plus douce, Emma et Ethan sont chaleureux et vous mettent en confiance tranquillement.

Mais Lumin Fitness n'est pas une salle de sport ordinaire. Ces coachs n'existent pas – du moins physiquement. Ce sont des intelligences artificielles, conçues afin d'accompagner les sportifs dans leur entraînement sur les grands écrans à LED couvrant les murs de cette salle de sport, qui a ouvert en septembre 2023 à Las Colinas, au Texas.

Même si l'IA est de plus en plus omniprésente dans le secteur de la remise en forme (généralement associée à des miroirs connectés, des applis d'entraînement et des caméras intelligentes), les fondateurs de Lumin Fitness assurent que c'est la première salle de sport à intégrer aussi complètement l'IA. Ils sont convaincus que leur fo coaching par IA encouragera faire plus de sport même s'ils une mauvaise expérience de l ment en salle. L'idée, c'est d' méthode plus personnalisé personnes qui redoutent les humaines et peuvent se sen dées ou démotivées face à ur chair et en os.

CAPTEURS DE MOUVEMEN

Plongée dans la pénombre, l sport peut accueillir 14 pers même temps. Chacune peut programme d'entraînement i ou participer à des séances c de haute intensité où les me groupe effectuent les même ments, font des squats, des soulèvent des poids. Chaque s'entraîne dans un espace p face à un écran géant à LED. C écrans cachent des capteurs gistrent à la fois les mouven sportifs mais aussi ceux des équ spécialement conçus pour ce comme les haltères, les balle cice et les cordes à sauter, g mélange d'algorithmes et de d'apprentissage automatique.

Quand vous arrivez, vous c sur l'appli de Lumin Fitness le tuel qui correspond à votre mo

RELATED ARTICLES

NOVEMBER 2, 2023

Embracing Creativity: How AI Can Enhance the Creative Process

By Andres Fortino

The emergence of artificial intelligence (AI) has brought a new dimension to the creative process, allowing artists to explore uncharted territories and push the boundaries of their imagination. This blog post delves into how AI can become a powerful ally for artists, provides a generalized method for artists wanting to incorporate AI into their creative work, and illustrates the method with a concrete case study.

I. AI's Role in the Creative Process

Artists have always sought innovative ways to express their ideas, and AI is now enabling them to do just that. Whether you're a painter, musician, writer, or any other type of creative, AI has the potential to enhance your artistic journey in numerous ways:

- *Inspiration and Idea Generation:* AI can analyze vast amounts of data and generate unique concepts that might inspire an artist's next masterpiece. It can create unexpected connections between diverse concepts, fueling the artist's creative spark.

- *Visual Exploration:* For visual artists, AI-generated images can serve as starting points for new creations. AI algorithms can create abstract patterns, morph images, or generate unique compositions that artists can incorporate into their work.

- *Music Composition:* Musicians can harness AI to compose melodies, harmonies, and even entire pieces of music. AI can analyze existing compositions and generate original musical ideas, freeing artists to experiment with new genres and styles.

- *Textual Creativity:* Writers and poets can benefit from AI-generated text prompts, which can kickstart the writing process. AI can generate sentences, ideas, or even

entire paragraphs that serve as springboards for crafting engaging narratives.

Yet, working with AI presents a novel set of challenges that artists must navigate. While AI can be a powerful tool, the balance between human intuition and technological assistance remains delicate to achieve. Key challenges include:

- *Maintaining Artistic Authenticity:* One of the foremost challenges is preserving the artist's unique voice and authenticity. AI-generated content might sometimes dominate the creative process, losing the artist's individuality and emotional depth in the final artwork.

- *Over-reliance on AI:* Relying too heavily on AI-generated elements can hinder an artist's own creative skills. Artists might become dependent on AI for ideas, stifling

proficiency over time.

- *Limited Artistic Intuition:* AI-generated content is based on patterns and data, often missing the intuitive leaps and creative insights that artists make. This can result in artworks that lack the spontaneity and imaginative leaps unique to human creativity.

- *Blurring of Boundaries:* The line between what constitutes the artist's creation and the AI's contribution can become blurred. Artists must grapple with ethical concerns related to authorship and ownership of AI-generated content. Determining who owns the rights to the AI-enhanced artwork can be complex, especially when AI generates significant portions of the composition.

How can artists reap the benefits without becoming overly dependent on technology? Let's dive in.

II. A Generalized Method

The challenges of using AI in art underscore the difficult interplay between technological innovation and artistic expression. As artists embrace AI as a creative tool, they must navigate these challenges with mindfulness and creativity, finding ways to harness the benefits of AI while preserving their unique artistic identity and emotional resonance.

Bottomline: The transformational potential of artificial intelligence within the artistic domain is not about replacing the artist's touch but rather enhancing it. Despite AI-specific challenges, there are systematic ways to navigate the uncharted waters of AI-enhanced artistic expression without sacrificing the human touch. When working with AI, artists could use the following method:

- *Identify Your Objective:* Determine the specific aspect of your creative process that you'd like to enhance using AI. Whether it's generating ideas, creating visuals, composing music, or something else, defining your objective is the first step.

- *Select the Right AI Tool:* There are various AI tools and platforms designed for different creative domains. Research and choose the AI tool that aligns with your artistic goals. For instance, artists might consider tools like Google's DeepDream for image manipulation or Jukedeck for music composition.

- *Generate AI-Enhanced Content:* Once you've selected your AI tool, start generating AI-enhanced content. For instance, if you're a painter, experiment with AI-generated images that can serve as the foundation for your artwork.

- *Integrate AI Output:* Incorporate the AI-generated content into your creative work. This could involve blending AI-generated visuals into a traditional painting or

weaving AI-generated melodies into a musical composition.

- *Iterate and Collaborate:* Don't hesitate to experiment with multiple iterations of AI-generated content and integrate feedback from peers or mentors. Collaboration can help refine your creative vision and ensure a seamless integration of AI elements.

- *Add Your Artistic Touch:* While AI can enhance the creative process, remember that your artistic touch remains crucial. Use AI-generated content as a foundation, and then infuse it with your unique style, emotions, and personal narrative.

Let's see this method in action with a concrete case study.

III. A Case Study: Emily's Forest Painting

Step 1: Identifying the Objective
Emily, a budding visual artist, was eager to infuse her work with fresh ideas. She wanted to experiment with abstract patterns that could introduce a new dimension to her traditional paintings. By clarifying her objective, Emily set a clear direction for her exploration of AI-generated content.

Step 2: Selecting the Right AI Tool
After researching various AI tools, Emily settled on Google's DeepDream for its ability to create surreal and abstract images. DeepDream's algorithm uses neural networks to enhance and modify images, making it an ideal fit for Emily's goal of generating unique visual patterns that she could later integrate into her art.

Step 3: Generating AI-Enhanced Content
With DeepDream in hand, Emily began the process by selecting a serene image of a forest scene as her starting point. She uploaded the image to the AI tool and used the following prompt: "Transform this forest image into a mesmerizing array of colors and shapes that can inspire my next painting." The resulting version bore little resemblance to the original. The once tranquil forest was now a kaleidoscope of vibrant colors and intricate shapes, representing an abstract interpretation of nature.

Step 4: Integrating AI Output
Having obtained the AI-generated image, Emily prepared her canvas. She used acrylic paints in a color palette inspired by the vivid hues of the AI output. Drawing on her expertise as a traditional painter, Emily meticulously recreated the dreamlike patterns onto the canvas. She carefully selected brushes and techniques that would capture the essence of the AI-generated image while retaining her unique artistic touch.

Step 5: Iterating and Collaborating
As Emily's painting took shape, she shared her progress with fellow artists and mentors. The collaborative feedback loop proved invaluable in helping her navigate challenges and make informed decisions about which patterns to emphasize. The input she received not only refined her artistic choices but also validated the innovative direction she was taking.

Step 6: Adding Her Artistic Touch
Throughout the process, Emily continuously infused her work with her emotions and perspective. She harmonized the AI-generated patterns with her artistic style, ensuring her voice remained prominent. This integration of human creativity with AI-generated content resulted in a truly collaborative painting between artist and machine.

Final Words

Emily's artistic journey culminates in a captivating painting that integrates AI-generated abstract patterns with her unique artistic style. The final artwork depicts a tranquil forest scene transformed into a kaleidoscope of vibrant colors and intricate shapes. The abstract patterns, inspired by the AI-generated content, flow organically within the composition, evoking a dreamlike atmosphere that resonated with viewers.

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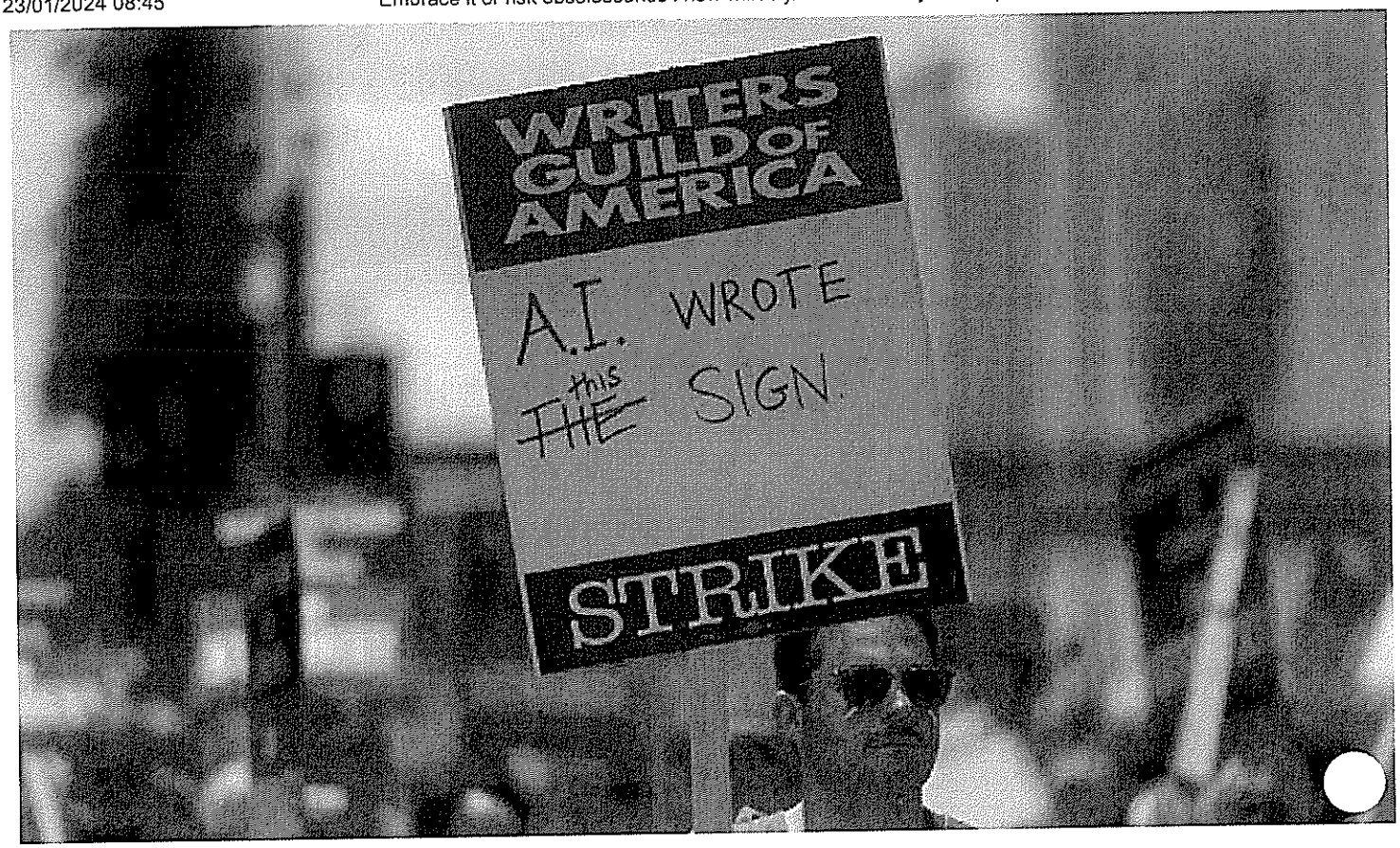


Film industry

'Embrace it or risk obsolescence': how will AI jobs affect Hollywood?

As dual Hollywood strikes rage on, studios and streamers such as Netflix and Disney are on a hiring spree within the world of artificial intelligence

Adrian Horton

@adrian_horton

Mon 21 Aug 2023 17.15 CEST

Since actors joined writers on the picket line in July, the two guilds, on their first joint strike since 1960, have found a common locus of fear and frustration: the potential encroachment of artificial intelligence on their livelihoods.

The Writers Guild of America (WGA) warns of the possibility that generative AI - the type of machine-learning systems capable of creating text, images and video, such as OpenAI's ChatGPT - could allow studios, represented by the Alliance of Motion Picture and Television Producers (AMPTP), to cut costs by forgoing the employment of human writers for AI-produced scripts. The Screen Actors Guild (Sag-Aftra) is concerned with the use of digital likenesses, particularly after Duncan Crabtree-Ireland, the guild's chief negotiator, said studios proposed to pay background actors for a day's work to use their images in perpetuity. (The AMPTP has disputed this claim as a "mischaracterization".)

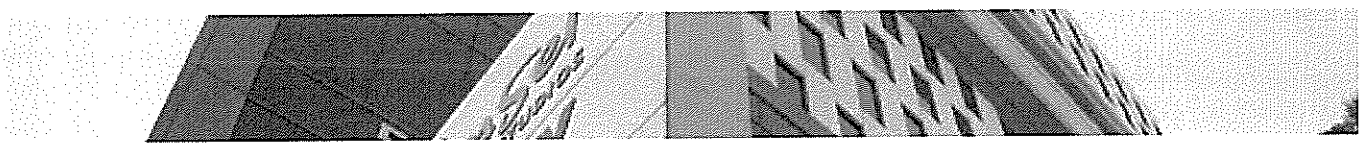
All the while, entertainment companies, or tech conglomerates with entertainment divisions, have continued to expand their human staff tasked with the development, research or management of AI. Last month, Netflix made headlines for a job listing for an AI product manager with an annual salary somewhere between $300,000 and $900,000 (according to Sag-Aftra, 87% of the guild's actors make less than $26,000 a year). A review of Disney's job board by the Guardian found at least a dozen roles related to machine learning, several of them within its media & entertainment division. Tech companies such as Amazon and Apple have, of course, numerous open machine learning positions, with some specifically tied to entertainment (a Seattle-based AI role for Prime Video Personalization and Discovery offers, according to the listing, "a once-in-a-lifetime opportunity to shape the future of TV for billions of viewers worldwide. We know our future success is inextricably tied to being a center of excellence in machine learning science and we invest in it.").

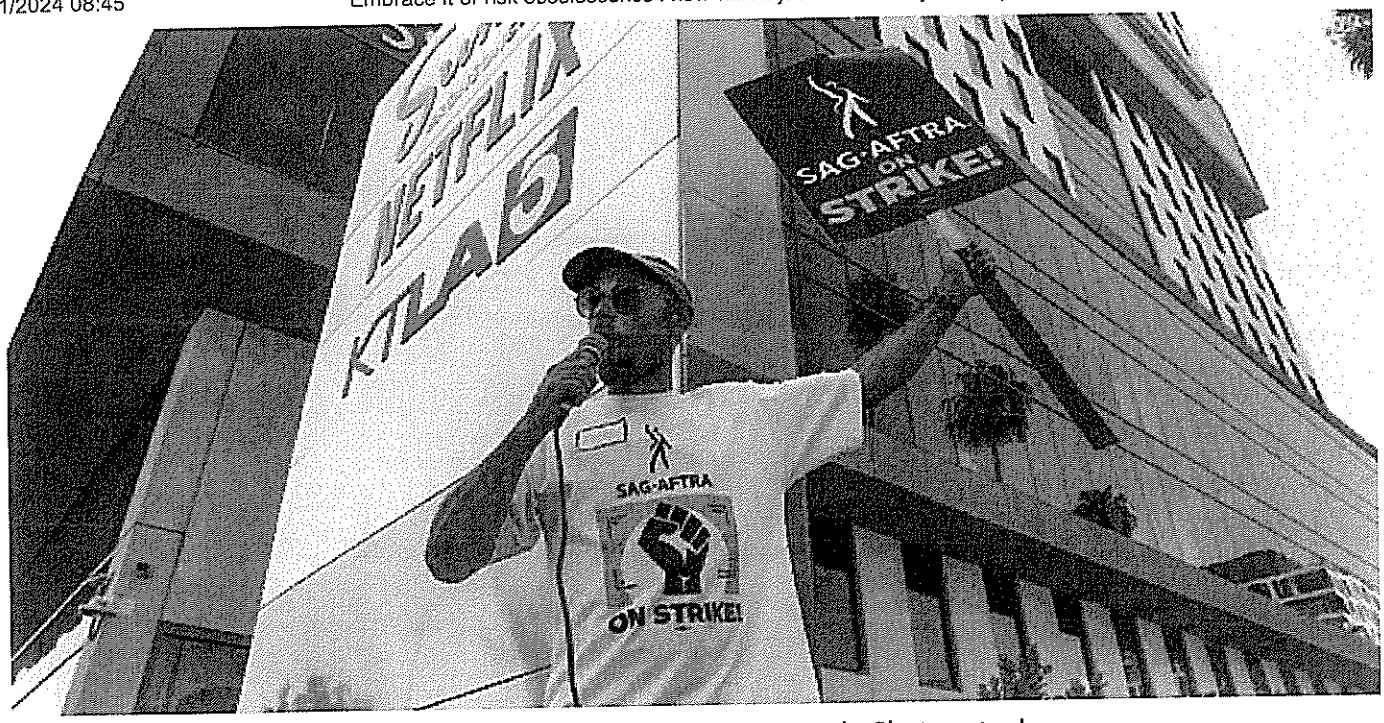
Hollywood's quiet AI hiring spree, first reported by the Hollywood Reporter and the Los Angeles Times, is not necessarily tied directly to AI-generated scripts or actors' likenesses, nor are all the positions related to generative AI, the subject of much ethical debate and concern. But taken together, the push to expand AI employment indicates an industry-wide arms race to build up companies' machine learning capabilities, cutting across many aspects of the business. "All of the studios see the opportunity," said Dawn Chmielewski, a US entertainment business correspondent at Reuters and the co-author of Binge Times, a book on Hollywood's streaming wars.

"Obviously, cost is a consideration, but also keeping abreast of the pace of technological change. The studios are not unfamiliar with how Silicon Valley can create a technology that suddenly and dramatically changes their business."

Some of these positions build on existing AI capabilities within entertainment companies, which already use machine learning for recommendations, advertising and dubbing of foreign languages. Disney is hiring for US-based machine learning engineers for its recommendation algorithms at Hulu and Disney+; Netflix seeks an applied machine learning scientist for the globalization team ($150,000 to $700,000) to "develop algorithms that power high quality localization at scale" and "shape the future of localization and global entertainment at Netflix".

Sony has open roles for use of AI in video games and machine learning audio processing for, among other things, post production of music and movies, as well as ethics-related roles such as AI ethics technical program manager and AI privacy and security project manager. (All roles are part of Tokyo-based Sony Group, which includes Sony Pictures Entertainment and opened its own AI ethics office in 2021.)





A striking actor outside Netflix's Los Angeles office. Photograph: Shutterstock

It's difficult to ascertain the scope of each role, and its potential impact on the entertainment business, from the outside (through a spokesman, Netflix declined to comment this article; Disney, Sony and Amazon could not be reached for comment). But the picture of current investment in AI by entertainment companies is slowly coming into view.

"Generally speaking, there's a lot of fear of missing out that's really sweeping the industry," said Ben Zhao, a professor of computer science at the University of Chicago. Industry executives "are not necessarily sure about what it is that they want" as "companies are still trying to figure out their AI strategy".

The hiring boom goes beyond entertainment; nationwide, companies are procuring "head of AI" leadership positions with vague mandates in an effort to get ahead of the curve, or out of fear of being left behind; the number of people in AI leadership roles in the US has grown threefold in the past five years, according to data from LinkedIn. "We are all going to be touched by this technology," said Chmielewski. "And the studios certainly see an imperative to embrace it or risk obsolescence."

For entertainment companies, the AI hiring boom reflects "a combination of trying to find people with the business acumen to understand what the market needs, what they can do with current AI, and how they can best leverage advancements in AI, particularly generative AI", said Zhao.

Disney, in particular, is making a concerted push toward AI, framed as part of the company's long tradition of embracing new technology or as part of an inevitable march of progress. (Disney Studios in Burbank, for example, has listed a job for a senior machine learning engineer to "shape the next generation of creative and production technology and directly help drive innovation across our cinematic pipelines and theatrical experiences".)

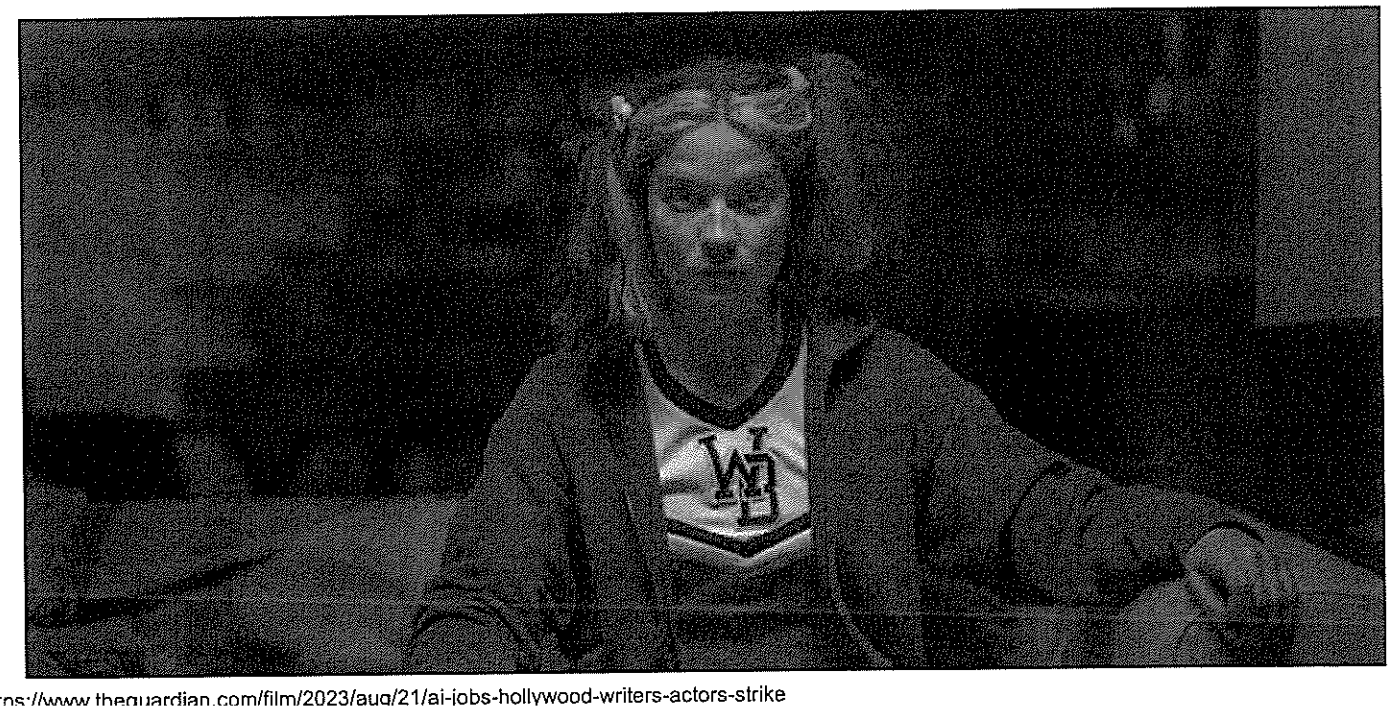
pipelines and theatrical experiences".

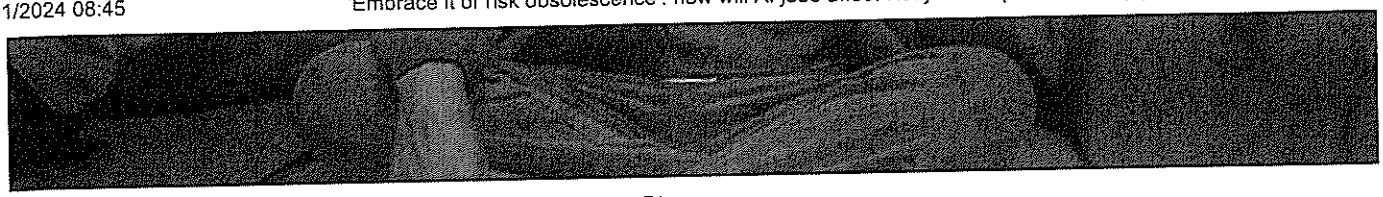
The company recently formed an internal taskforce to study AI and examine how it could be used across divisions, and the chief executive, Bob Iger, has indicated that the company sees AI, including generative AI, as a clear part of its creative future. "Nothing is going to stop technological advancement," Iger said at a company town hall last November. Generative AI technology, he added, is "something that at some point in the future the company will embrace".

"In fact, we're already starting to use AI to create some efficiencies and ultimately to better serve consumers," Iger said during an earnings call this July, as reported by journalist Lee Fang. Asked about the framing of AI as inevitable, Zhao pointed out that "AI is being touted as an efficiency improver. It's worthwhile to think about the ultimate result of that efficiency" - namely the prospect of lost human jobs.

Generative AI is, indeed, already shaping the things we watch. It's used in visual effects, to help with dubbing for Netflix's many foreign language shows, or to produce a small version of a real rival soccer coach for games in Apple's Ted Lasso, or to create a full younger version of Will Smith in Paramount's 2019 film Gemini Man. Disney-owned Marvel Studios controversially used AI to generate the opening credits for its recent series Secret Invasion.

In July, Netflix premiered a new Spanish reality dating series, Deep Fake Love, in which scans of contestants' faces and bodies are used to create "deepfake" simulations of themselves. The company's gaming department has used AI to produce narratives and dialogue. In the documentary world, film-makers have used generative AI to recreate the voices of the late Anthony Bourdain and Andy Warhol to bridge archival gaps, and to create "digital veils" - fake faces - to protect interview subjects in Welcome to Chechnya, a documentary on the Russian government's persecution of LGBTQ+ people.





Annie Murphy in Black Mirror. Photograph: Netflix

For now, the major fears of writers and actors - the kind depicted in the Black Mirror episode Joan Is Awful, in which a Netflix stand-in streaming service airs an entirely AI-created show - are not yet realized. But from a capability standpoint, "writers and actors could both be replaced by AI in the near future, along with everyone who works to create a movie using real human actors. We could see entire movies generated by AI without any human involvement," said David Krueger, a researcher with the University of Cambridge's Machine Learning Group.

"This probably won't happen in the next few years, but could easily happen within the decade."

This possibility has underscored actors' and writers' demands for protections over AI, from what creative material (performances, text) can be used to train models to protections against AI-generated scripts. The AMPTP has released several public statements on the matter of AI, which "raises hard, important creative and legal questions for everyone" that "requires a lot more discussion, which we've committed to doing" and noting that according to the current agreement with the WGA, AI-generated material would not be eligible for credit as "only a 'person' can be considered a writer".

"We are still in the early stages," said Zhao. "There is so much hype that dominates conversations. And it is very difficult to see facts from the hype" - particularly on the capability and risks of generative AI. It remains unclear what the limits on those will be. But the race for AI in a post-strike Hollywood is already under way.

THE CONVERSATION

L'expertise universitaire, l'exigence journalistique

Hollywood writers picket in front of Warner Bros. Studios. AP Photo/Marcio Jose Sanchez

What are Hollywood actors and writers afraid of? A cinema scholar explains how AI is upending the movie and TV business

Publié: 7 août 2023, 15:03 CEST

Holly Willis
Professor of Cinematic Arts, University of Southern California

The bitter conflict between actors, writers and other creative professionals and the major movie and TV studios represents a flashpoint in the radical transformation roiling the entertainment industry. The ongoing strikes by the Writers Guild of America and the Screen Actors Guild were sparked in part by artificial intelligence and its use in the movie industry.

Both actors and writers fear that the major studios, including Amazon/MGM, Apple, Disney/ABC/Fox, NBCUniversal, Netflix, Paramount/CBS, Sony, Warner Bros. and HBO, will use generative AI to exploit them. Generative AI is a form of artificial intelligence that learns from text and images to automatically produce new written and visual works.

So what specifically are the writers and actors afraid of? I'm a professor of cinematic arts. I conducted a brief exercise that illustrates the answer.

I typed the following sentence into ChatGPT: Create a script for a 5-minute film featuring Barbie and Ken. In seconds, a script appeared.

Next, I asked for a shot list, a breakdown of every camera shot needed for the film. Again, a response appeared almost instantly, featuring not only a "montage of fun activities," but also a fancy flashback sequence. The closing line suggested a wide shot showing "Barbie and Ken walking away from the beach together, hand in hand."

Next, on a text-to-video platform, I typed these words into a box labeled "Prompt": "Cinematic movie shot of Margot Robbie as Barbie walking near the beach, early morning light, pink sun rays illuminating the screen, tall green grass, photographic detail, film grain."

About a minute later, a 3-second video appeared. It showed a svelte blond woman walking on the beach. Is it Margot Robbie? Is it Barbie? It's hard to say. I decided to add my own face in place of Robbie's just for fun, and in seconds, I've made the swap.

I now have a moving image clip on my desktop that I can add to the script and shot list, and I'm well on my way to crafting a short film starring someone sort of like Margot Robbie as Barbie.

The fear

None of this material is particularly good. The script lacks tension and poetic grace. The shot list is uninspired. And the video is just plain weird-looking.

However, the ability for anyone – amateurs and professionals alike – to create a screenplay and conjure the likeness of an existing actor means that the skills once specific to writers and the likeness that an actor once could uniquely call his or her own are now readily available – with questionable quality, to be sure – to anyone with access to these free online tools.

Given the rate of technological change, the quality of all this material created through generative AI is destined to improve visually, not only for people like me and social media creatives globally, but possibly for the studios, which are likely to have access to much more powerful computers. Further, these separate steps – preproduction, screenwriting, production, postproduction – could be absorbed into a streamlined prompting system that bears little resemblance to today's art and craft of moviemaking.

Generative AI is a new technology but it's already reshaping the film and TV industry.

Writers fear that, at best, they will be hired to edit screenplays drafted by AI. They fear that their creative work will be swallowed whole into databases as the fodder for writing tools to sample. And they fear that their specific expertise will be pushed aside in favor of "prompt engineers," or those skilled at working with AI tools.

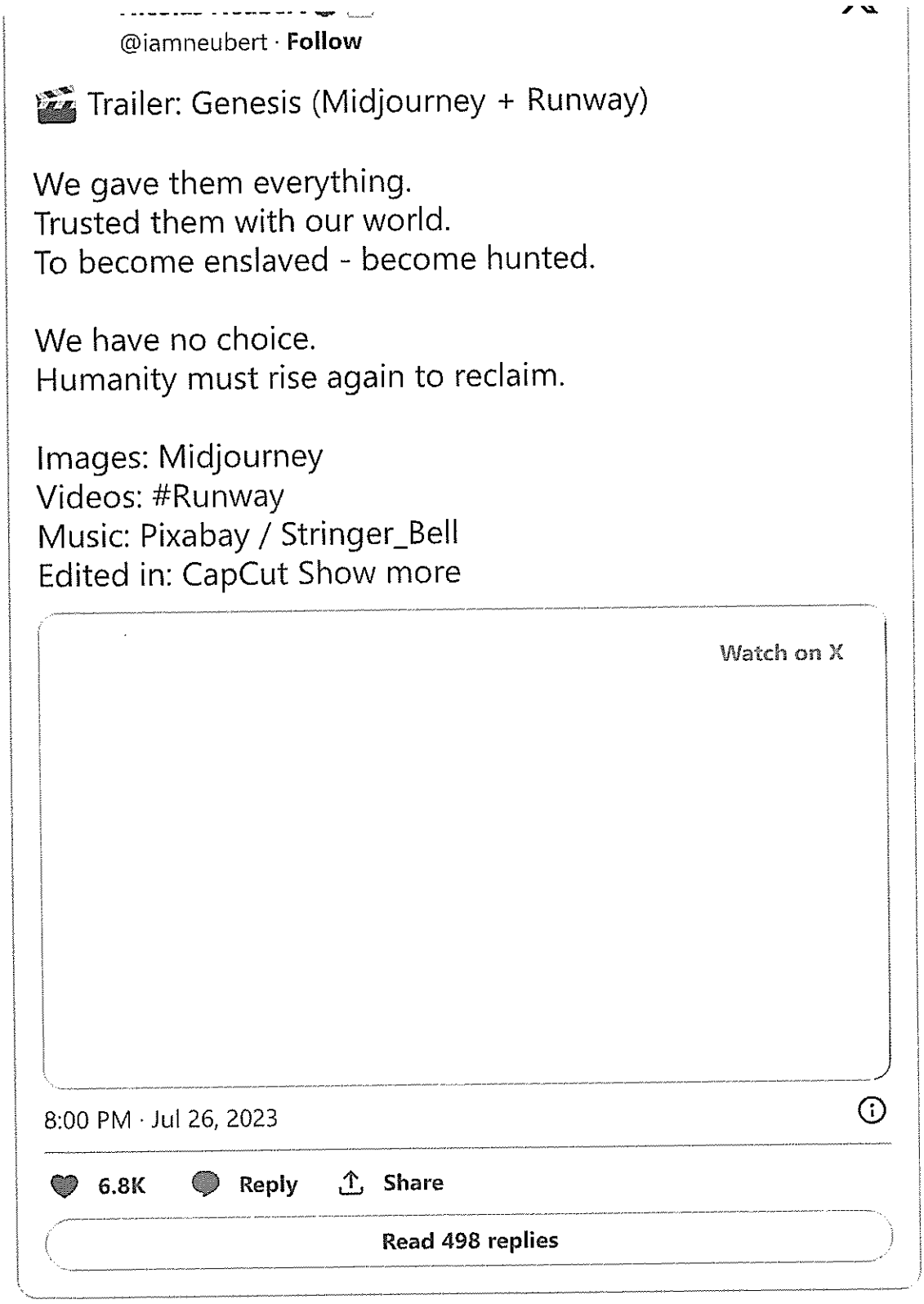
And actors fret that they will be forced to sell their likeness once, only to see it used over and over by studios. They fear that deepfake technologies will become the norm, and real, live actors won't be needed at all. And they worry that not only their bodies but their voices will be taken, synthesized and reused without continued compensation. And all of this is on top of dwindling incomes for the vast majority of actors.

On the road to the AI future

Are their fears justified? Sort of. In June 2023, Marvel showcased titles – opening sequences with episode names – for the series "Secret Invasion" on Disney+ that were created in part with AI tools. The use of AI by a major studio sparked controversy due in part to the timing and fears about AI displacing people from their jobs. Further, series director and executive producer Ali Selim's tone-deaf description of the use of AI only added to the sense that there is little concern at all about those fears.

Then on July 26, software developer Nicholas Neubert posted a 48-second trailer for a sci-fi film made with images made by AI image generator Midjourney and motion created by Runway's image-to-motion generator, Gen-2. It looks terrific. No screenwriter was hired. No actors were used.

Nicolas Neubert



In addition, earlier this month, a company called Fable released Showrunner AI, which is designed to allow users to submit images and voices, along with a brief prompt. The tool responds by creating entire episodes that include the user.

The creators have been using South Park as their sample, and they have presented plausible new episodes of the show that integrate viewers as characters in the story. The idea is to create a new form of audience engagement. However, for both writers and actors, Showrunner AI must be chilling indeed.

Finally, Volkswagen recently produced a commercial that features an AI reincarnation of Brazilian musician Elis Regina, who died in 1982. Directed by Dulcidio Caldeira, it shows the musician as she appears to sing a duet with her daughter. For some, the song was a beautiful revelation, crafting a poignant mother-daughter reunion.

However, for others, the AI regeneration of someone who has died prompts worries about how one's likeness might be used after death. What if you are morally opposed to a particular film project, TV show or commercial? How will actors – and others – be able to retain control?

Keeping actors and writers in the credits

Writers' and actors' fears could be assuaged if the entertainment industry developed a convincing and inclusive vision that acknowledges advances in AI, but that collaborates with writers and actors, not to mention cinematographers, directors, art designers and others, as partners.

At the moment, developers are rapidly building and improving AI tools. Production companies are likely to use them to dramatically cut costs, which will contribute to a massive shift toward a gig-oriented economy. If the dismissive attitude toward writers and actors held by many of the major studios continues, not only will there be little consideration of the needs of writers and actors, but technology development will lead the conversation.

However, what if the tools were designed with the participation of informed actors and writers? What kind of tool would an actor create? What would a writer create? What sorts of conditions regarding intellectual property, copyright and creativity would developers consider? And what sort of inclusive, forward-looking, creative cinematic ecosystem might evolve? Answering these questions could give actors and writers the assurances they seek and help the industry adapt in the age of AI.

More From Artificial Intelligence

Explore This Series

TECHNOLOGY

The First Year of AI College Ends in Ruin

There's an arms race on campus, and professors are losing.

By Ian Bogost

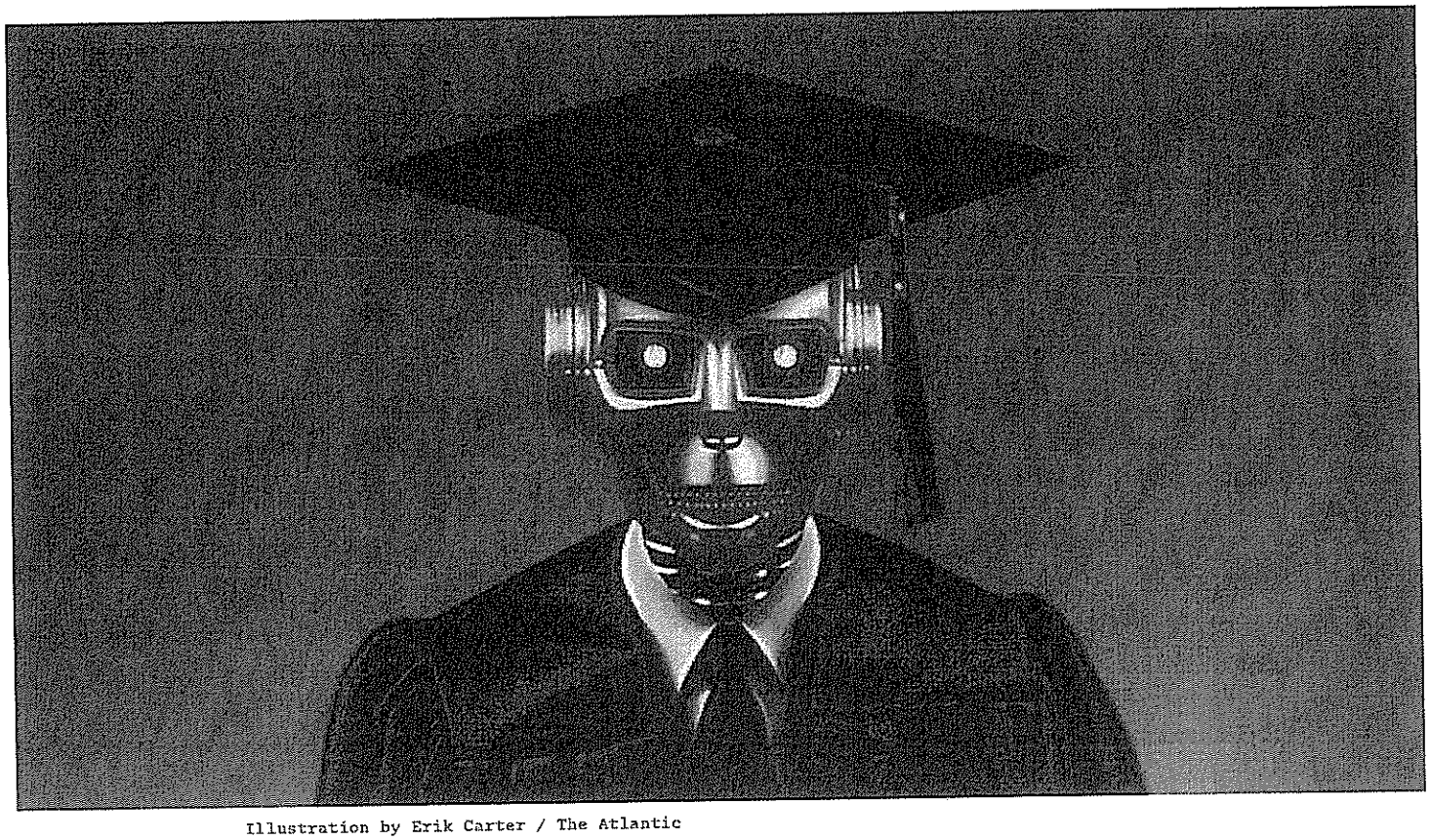


Illustration by Erik Carter / The Atlantic

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ONE HUNDRED PERCENT AI. That's what the software concluded about a student's paper. One of the professors in the academic program I direct had come across this finding and asked me what to do with it. Then another one saw the same result—*100 percent AI*—for a different paper by that student, and also wondered: *What does this mean?* I did not know. I still don't.

The problem breaks down into more problems: whether it's possible to know for certain that a student used AI, what it even means to "use" AI for writing papers, and when that use amounts to cheating. The software that had flagged our student's papers was also multilayered: Canvas, our courseware system, was running Turnitin, a popular plagiarism-detection service, which had recently installed a new AI-detection algorithm. The alleged evidence of cheating had emerged from a nesting doll of ed-tech black boxes.

This is college life at the close of ChatGPT's first academic year: a moil of incrimination and confusion. In the past few weeks, I've talked with dozens of educators and students who are now confronting, for the very first time, a spate of AI "cheating." Their stories left me reeling. Reports from on campus hint that legitimate uses of AI in education may be indistinguishable from unscrupulous ones, and that identifying cheaters—let alone holding them to account—is more or less impossible.

ONCE UPON A TIME, students shared exams or handed down papers to classmates. Then they started outsourcing their homework, aided by the internet. Online businesses such as EssayShark (which asserts that it sells term

papers for "research and reference purposes only") have professionalized that process. Now it's possible for students to purchase answers for assignments from a "tutoring" service such as Chegg—a practice that the kids call "chegging." But when the AI chatbots were unleashed last fall, all these cheating methods of the past seemed obsolete. "We now believe [ChatGPT is] having an impact on our new-customer growth rate," Chegg's CEO admitted on an earnings call this month. The company has since lost roughly $1 billion in market value.

Other companies could benefit from the same upheaval. By 2018, Turnitin was already taking more than $100 million in yearly revenue to help professors sniff out impropriety. Its software, embedded in the courseware that students use to turn in work, compares their submissions with a database of existing material (including other student papers that Turnitin has previously consumed), and flags material that might have been copied. The company, which has claimed to serve 15,000 educational institutions across the world, was acquired for $1.75 billion in 2019. Last month, it rolled out an AI-detection add-in (with no way for teachers to opt out). AI-chatbot countermeasures, like the chatbots themselves, are taking over.

Now, as the first chatbot spring comes to a close, Turnitin's new software is delivering a deluge of positive identifications: This paper was "18% AI"; that one, "100% AI." But what do any of those numbers really mean? Surprisingly—outrageously—it's very hard to say for sure. In each of the "100% AI" cases I heard about, students insisted that they had not let ChatGPT or any other AI tool do all of their work.

But according to the company, that designation does indeed suggest that 100 percent of an essay—as in, every one of its sentences—was computer generated, and, further, that this judgment has been made with 98 percent certainty. A Turnitin spokesperson acknowledged via email that "text created by another tool that uses algorithms or other computer-enabled systems," including grammar checkers and automated translators, could lead to a false positive, and that some "genuine" writing can be similar to AI-generated writing. "Some people simply write very predictably," she told me. Are all of these caveats accounted for in the company's claims of having 98 percent certainty in its analyses?

Perhaps it doesn't matter, because Turnitin disclaims drawing any conclusions about misconduct from its results. "This is only a number intended to help the educator determine if additional review or a discussion with the student is warranted," the spokesperson said. "Teaching is a human endeavor." The company has a guide for humans who confront the software's "small" risk of generating false positives. Naturally, it recommends the use of still more Turnitin resources (an AI-misuse rubric and AI-misuse checklist are available) and doing more work than you ever would have done in the first place.

Read: ChatGPT is about to dump more work on everyone

In other words, the student in my program whose work was flagged for being "100% AI" might have used a little AI, or a lot of AI, or maybe something in between. As for any deeper questions—exactly *how* he used AI, and whether he was wrong to do so—teachers like me are, as ever, on our own.

SOME STUDENTS probably are using AI at 100 percent: to complete their work absent any effort of their own. But many use ChatGPT and other tools to generate ideas, help them when they're stuck, rephrase tricky paragraphs, or check their grammar.

Where one behavior turns into another isn't always clear. Matthew Boedy, an English professor at the University of North Georgia, told me about one student so disengaged, he sometimes attended class in his pajamas. When that student submitted an uncharacteristically adept essay this spring, Boedy figured a chatbot was involved, and OpenAI's verification tool confirmed as much. The student admitted that he hadn't known how to begin, so he asked ChatGPT to write an introduction, and then to recommend sources. Absent a firm policy on AI cheating to lean on, Boedy talked through the material with the student in person and graded him based on that conversation.

A computer-science student at Washington University in St. Louis, where I teach, saw some irony in the sudden shift from giving fully open-book assignments earlier in the pandemic to this year's attitude of "you can use anything except AI." (I'm withholding the names of students so that they can be frank about their use of AI tools.) This student, who also works as a teaching assistant, knows firsthand that computers can help solve nearly every technical exercise that is assigned in CS courses, and some conceptual ones too. But taking advantage of the technology "feels less morally bankrupt," he said, "than paying for Chegg or something." A student who engages with a chatbot is doing some kind of work for themselves—and learning how to live in the future.

Another student I spoke with, who studies politics at Pomona College, uses AI as a way to pressure-test his ideas. Tasked with a research paper on colonialism in the Middle East, the student formulated a thesis and asked ChatGPT what it thought of the idea. "It told me it was bogus," he said. "I then proceeded to debate it—in doing so, ChatGPT brought up some serious counterarguments to my thesis that I went on to consider in my paper." The student also uses the bot to recommend sources. "I treat ChatGPT like a combination of a co-worker and an interested audience," he said.

Read: The college essay is dead

The Pomona student's use of AI seems both clever and entirely aboveboard. But if he borrows a bit too much computer-generated language, Turnitin might still flag his work for being inauthentic. A professor can't really know whether students are using ChatGPT in nuanced ways or whether they've engaged in brazen cheating. No problem, you might say: Just develop a relationship of mutual trust with students and discuss the matter with them openly. A good idea at first blush, but AI risks splitting faculty and student interests. "AI is dangerous in that it's extremely tempting," Dennis Jerz, a professor at Seton Hill University, in Greensburg, Pennsylvania, told me. For students who are not invested in their classes, the results don't even have to be good—just good enough, and quick. "AI has made it much easier to churn out mediocre work."

Faculty already fret over getting students to see the long-term benefit of assignments. Their task is only getting harder. "It has been so completely demoralizing," an English teacher in Florida told me about AI cheating. "I have gone from *loving* my job in September of last year to deciding to completely leave it behind by April." (I am not printing this instructor's name or employer to protect him from job-related repercussions.) His assignments are typical of composition: thesis writing, bibliographies, outlines, and essays. But the teacher feels that AI has initiated an arms race of irrelevance between teachers and students. "With tools like ChatGPT, students think there's just no reason for them to care about developing those skills," he said. After students admitted to using ChatGPT to complete assignments in a previous term—for one student, *all* of the assignments—the teacher wondered why he was wasting his time grading automated work the students may not have even read. That feeling of pointlessness has infected his teaching process. "It's just about crushed me. I fell in love with teaching, and I have loved my time in the classroom, but with ChatGPT, everything feels pointless."

The loss that he describes is deeper and more existential than anything academic integrity can protect: a specific, if perhaps decaying, way of being among students and their teachers. "AI has already changed the classroom into something I no longer recognize," he told me. In this view, AI isn't a harbinger of the future but the last straw in a profession that was almost lost already, to funding collapse, gun violence, state overreach, economic decay, credentialism, and all the rest. New technology arrives on that grim shore, making schoolwork feel worthless, carried out to turn the crank of a machine rather than for teaching or learning.

What does this teacher plan to do after leaving education, I wonder, and then ask. But I should have known the answer, because what else is there: He's going to design software.

A COMMON LINE about education in the age of AI: It will force teachers to adapt. Athena Aktipis, a psychology professor at Arizona State University, has taken the opportunity to restructure her whole class, preferring discussions and student-defined projects to homework. "The students said that the class really made them feel human in a way that other classes didn't," she told me.

But for many students, college isn't just a place for writing papers, and cutting corners can provide a different way of feeling human. The student in my program whose papers raised Turnitin's "100% AI" flag told me that he'd run his text through grammar-checking software, and asked ChatGPT to improve certain lines. Efficiency seemed to matter more to him than quality. "Sometimes I want to play basketball. Sometimes I want to work out," he said when I asked if he wanted to share any impressions about AI for this story. That may sound outrageous: *College is for learning, and that means doing your assignments!* But a milkshake of stressors, costs, and other externalities has created a mental-health crisis on college campuses. AI, according to this student, is helping reduce that stress when little else has.

Read: The end of recommendation letters

Similar pressures can apply to teachers too. Faculty are in some ways just as tempted as their students by the power of the chatbots, for easing work they find irritating or that distract from their professional goals. (As I pointed out last month, the traditional recommendation letter may be just as threatened by AI as the college essay.) Even so, faculty are worried the students are cheating themselves—and irritated that they've been caught in the middle. Julian Hanna, who teaches culture studies at Tilburg University, in the Netherlands, thinks the more sophisticated uses of AI will mostly benefit the students who were already set to succeed, putting disadvantaged students even further at risk. "I think the best students either don't need it or worry about being caught, or both." The others, he says, risk learning less than before. Another factor to consider: Students who speak English as a second language may be more reliant on grammar-checking software, or more inclined to have ChatGPT tune up their sentence-level phrasing. If that's the case, then they'll be singled out, disproportionately, as cheats.

One way or another, the arms race will continue. Students will be tempted to use AI too much, and universities will try to stop them. Professors can choose to accept some forms of AI-enabled work and outlaw others, but their choices will be shaped by the software that they're given. Technology itself will be more powerful than official policy or deep reflection.

Universities, too, will struggle to adapt. Most theories of academic integrity rely on crediting *people* for their work, not machines. That means old-fashioned honor codes will receive some modest updates, and the panels that investigate suspected cheaters will have to reckon with the mysteries of novel AI-detection "evidence." And then everything will change again. By the time each new system has been put in place, both technology and the customs for its use could well have shifted. ChatGPT has existed for only six months, remember.

Rethinking assignments in light of AI might be warranted, just like it was in light of online learning. But doing so will also be exhausting for both faculty and students. Nobody will be able to keep up, and yet everyone will have no choice but to do so. Somewhere in the cracks between all these tectonic shifts and their urgent responses, perhaps teachers will still find a way to teach, and students to learn.

Ian Bogost is a contributing writer at *The Atlantic*.

What Exactly Are the Dangers Posed by A.I.?

A recent letter calling for a moratorium on A.I. development blends real threats with speculation. But concern is growing among experts.

By Cade Metz
Cade Metz writes about artificial intelligence and other emerging technologies.

Published May 1, 2023 Updated May 7, 2023

In late March, more than 1,000 technology leaders, researchers and other pundits working in and around artificial intelligence signed an open letter warning that A.I. technologies present "profound risks to society and humanity."

The group, which included Elon Musk, Tesla's chief executive and the owner of Twitter, urged A.I. labs to halt development of their most powerful systems for six months so that they could better understand the dangers behind the technology.

"Powerful A.I. systems should be developed only once we are confident that their effects will be positive and their risks will be manageable," the letter said.

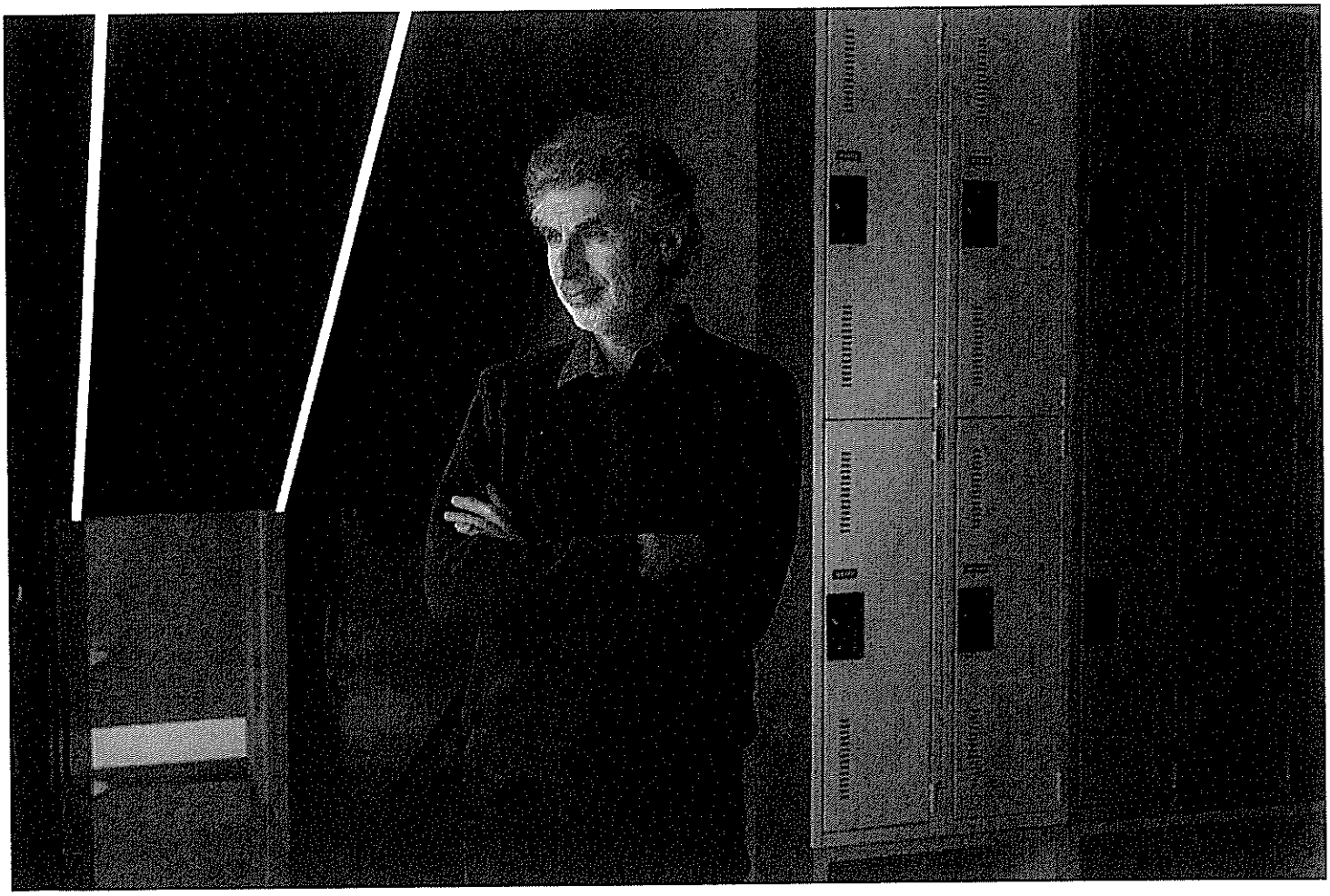
The letter, which now has over 27,000 signatures, was brief. Its language was broad. And some of the names behind the letter seemed to have a conflicting relationship with A.I. Mr. Musk, for example, is building his own A.I. start-up, and he is one of the primary donors to the organization that wrote the letter.

But the letter represented a growing concern among A.I. experts that the latest systems, most notably GPT-4, the technology introduced by the San Francisco start-up OpenAI, could cause harm to society. They believed future systems will be even more dangerous.

Some of the risks have arrived. Others will not for months or years. Still others are purely hypothetical.

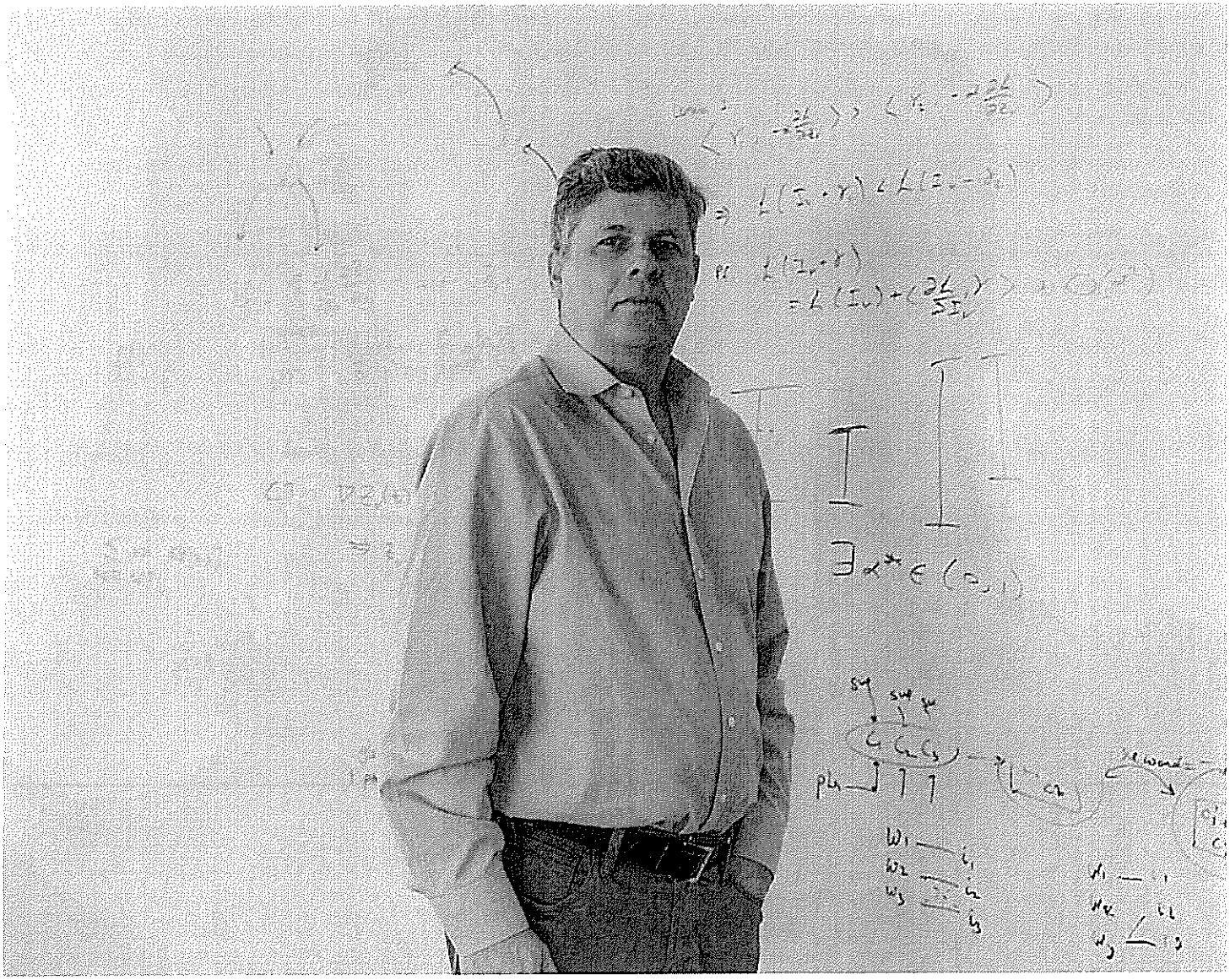
"Our ability to understand what could go wrong with very powerful A.I. systems is very weak," said Yoshua Bengio, a professor and A.I. researcher at the University of Montreal. "So we need to be very careful."

Why Are They Worried?



Yoshua Bengio spent the past four decades developing the technology that drives systems like GPT-4. Nasuna Stuart-Ulin for The New York Times

Dr. Bengio is perhaps the most important person to have signed the letter.



Oren Etzioni, the founding chief executive of the Allen Institute for AI, a lab in Seattle, said "rote jobs" could be hurt by A.I. Kyle Johnson for The New York Times

Experts are worried that the new A.I. could be job killers. Right now, technologies like GPT-4 tend to complement human workers. But OpenAI acknowledges that they could replace some workers, including people who moderate content on the internet.

They cannot yet duplicate the work of lawyers, accountants or doctors. But they could replace paralegals, personal assistants and translators.

A paper written by OpenAI researchers estimated that 80 percent of the U.S. work force could have at least 10 percent of their work tasks affected by L.L.M.s and that 19 percent of workers might see at least 50 percent of their tasks impacted.

"There is an indication that rote jobs will go away," said Oren Etzioni, the founding chief executive of the Allen Institute for AI, a research lab in Seattle.

Long-Term Risk: Loss of Control

Some people who signed the letter also believe artificial intelligence could slip outside our control or destroy humanity. But many experts say that's wildly overblown.

The letter was written by a group from the Future of Life Institute, an organization dedicated to exploring existential risks to humanity. They warn that because A.I. systems often learn unexpected behavior from the vast amounts of data they analyze, they could pose serious, unexpected problems.

They worry that as companies plug L.L.M.s into other internet services, these systems could gain unanticipated powers because they could write their own computer code. They say developers will create new risks if they allow powerful A.I. systems to run their own code.

"If you look at a straightforward extrapolation of where we are now to three years from now, things are pretty weird," said Anthony Aguirre, a theoretical cosmologist and physicist at the University of California, Santa Cruz and co-founder of the Future of Life Institute.