

Introduction

AI by People. for People

It's a quiet Monday morning in January at the University of Illinois Urbana-Champaign (UIUC). I arrive a bit early for the weekly research group meeting, sliding a few broken chairs off to the side. The room features a rectangular table with a projector on top and a wall-mounted screen. There are several windows letting in the winter sun. It warms the utilitarian room. Fifteen undergraduate and graduate students quietly trickle into the room. Everyone sheds their winter coats. The two women sit on opposite sides of the table. This morning, two graduate students will present their results to this small but engaged research group studying computer vision, a subfield in artificial intelligence (AI).

The primary purpose of this meeting is to refine the students' research while soliciting suggestions for future experiments. In computer vision, goals include automatically detecting images of people, road signs, or objects. During the first presentation, which is a computer-vision model involving the accuracy rates of an image-object detector, the student spends four minutes explaining one equation: identifying each variable along with its significance, all while sharing how the results compare to other research in the field.

Everyone in the room listens intently. Such discussions of the math are frequently met with fear or boredom by much of the public. As a result, math can be perceived to have almost magical properties when applied to such complex systems. There is no obfuscation in the presentation or follow-up questions. Everyone is open about the math. Direct and honest, there is no hint of AI hype.

Most people would be surprised someone like me is even in this

room. I started my graduate school journey initially wanting to study the fiction of Willa Cather. I admit that I'm lost in parts of the discussion, but to my surprise in other parts I understand what they're saying. When I focus and listen carefully, I too can make sense of enough of the mathematical ideas to dispel some of the purported magic of AI hype.

The second student argues for the advantages of the team's model in comparison to other models on computer vision. The advantages include the model's ability to generalize better than other state-of-the-art models.

At the conclusion of each student's presentation, the faculty advisor calmly offers feedback. He suggests moving discussion of the equation earlier in the presentation. He asks about critical baselines and for clarifying contributions. He suggests giving more context about the classifier they're using while reminding students to be respectful of other presenters' time. The meeting concludes with a discussion of how to approach writing up these results. Some students express brief frustration with local infrastructure: a user outside of the group was taking up too much time on the campus computer cluster.

This type of scene doesn't fit into our AI discourse in the media. It doesn't fit the language from corporations. Or even the government calls for million-dollar grants. Not even the historical narratives. It's certainly less exciting for the average person than the hyped media environment. Yet it's in these routine meetings where the progress in AI is made. In rooms such as these where the slow, methodical, and sometimes tedious work of AI happens. Here, researchers refine their models. They seek feedback on their approaches. They deliberate on the merits of their models and programs. And they conceive of how to communicate their progress. They talk, write, and make slides that need revision. The reality, which gets twisted by social media clickbait and AI peddlers, is that advancements in AI are incremental. Progress is built on a foundation of such meetings and the people in those meetings. This book is about those people.

AI Hype Has a Long History

By now, it's clear: AI is overhyped. In an interview with Bloomberg news, OpenAI CEO Sam Altman claimed that AI can solve poverty, then flippantly stated: "I think it'd be good to end poverty." In a tweet, Altman claimed a new version of ChatGPT was "magic intelligence in

the sky.” Emails from a technology website claim that their software is “like magic, but real.” Newspapers routinely run hyped articles touting the power of AI to transform businesses. Snake oil salesmen have invented all manner of hype cycles around AI.

The hype doesn’t end with the media or corporate America. It extends to the government. In 2023, the National Science Foundation announced it would fund AI with a \$140 million investment. In 2022, the National Institute of Health announced an investment of \$130 million in AI. Since 2018, the Department of Defense has invested billions of dollars in AI. The Trump and Biden White Houses issued hundreds of AI policy announcements, touting the transformative power of AI. These announcements come ensconced in overblown language about “endless” AI possibilities.

The hype around AI has been around for generations (Hopgood 2003; Suchman 2023; Suchman and Trigg 1996; van Assen et al. 2020). The most infamous historical example of this hype is likely the Mechanical Turk, the 1770 invention of Wolfgang von Kempelen in an attempt to produce a chess-playing automaton. Kempelen’s claim that the “automaton was capable of mechanical thought as well as movement was met with widespread scepticism, and the Mechanical Turk was widely assumed to be a hoax” (Stephens 2023, 66). It was never fully discovered how the automaton worked, leading to a mystique that covers up the humans involved with creating and inhabiting AI. This mystique is alive and well with the development of Amazon’s crowdsourced platform of the same name (Stephens 2023).

Looking to folklore and history around automation reveals the historical consequences of AI hype, including the ways in which automation is misrepresented as something nonhuman or better than human (Kang 2011; Kang and Halliburton 2020; Liveley and Thomas 2020; Park 2020; Truitt 2020). Unscrupulous people use hype to increase their power over those who are unfamiliar with the technical workings of AI technology, leading to mysticism or mythologizing of machines. Mythologizing leads to overstatement of machines’ capability, with extremes tending toward both good and bad. For example, Homer’s *Iliad* and *Odyssey* can be understood involving automation, such as the Gods using automatic gates to open their “heavenly citadels” (Liveley and Thomas 2020, 27). One consequence of “Homer’s intelligent machines” is a tendency toward utopian or dystopian extremes, an intensity still “repeated in many nineteenth-, twentieth-, and twenty-

first-century representations” (42–43). Racialized and gendered stereotypes emerge from these early representations of automata and automation (43). Similarly, by historically analyzing medieval objects such as sentry statues and spyglasses that enhanced human vision, E. R. Truitt argues that AI “often appear[s] in contexts of espionage and surveillance” while “promising a route to foreknowledge” and “attain[ing] and exert[ing] power” (2020, 53). These historical perspectives demonstrate that AI is not a benign or neutral tool. Without a focus on the people, AI hype perpetuates myths about automation as well as biases. Without the people, it just seems like AI is magic.

But if we focus on the people who make AI, we can gain a better understanding of AI without the hype. This book is thus paradoxical about AI and not at all about AI. It is about AI researchers and their work. In this sense, it is absolutely about AI. But because it looks at the people involved in AI, including their communication and writing practices, it is more about scientific and research communication than about AI technologies such as Generative AI (GenAI) chatbots like ChatGPT. Readers will not encounter any revelations about using AI to make millions of dollars. But readers will learn about the people producing AI research, including the communication challenges they encounter in their work. For those of us interested in writing, for I am at my core a writing teacher, we will learn about their writing habits and the pressures of publishing their research artifacts.

Not the Terminator

Before we go any further, it’s important to make some qualifications. AI, despite the portrayals we see in dystopian movies or novels, is far from the apocalyptic robots portrayed in *The Terminator* movies. The idea that AI is “The Terminator” is a fundamental misrepresentation of what computer scientists are doing. As one mathematician writes: “Reality is more prosaic. Recently, Google fired one of its senior engineers because he started to claim that his AI program was sentient. Wait until Hollywood gets a hold of that story!” (Sigmund 2023, 130). Dystopian movies about killer robots, while entertaining, present a false vision of AI.

AI is not killer robots. AI is not a malicious, sentient computer program. AI is multiple things, most of which are mundane tools. These tools range from sorting spam email to using GPS software for vehicle navigation. AI systems, if depicted accurately, optimize traffic