The Dawn of AI Magic

While many new developments last year will shape the world in times to come, few tech stories were as stunning or as momentous as those on **Artificial Intelligence** (AI).

With little fanfare and even less warning, AI burst out of the labs in 2022 with awesome new powers that instantly threatened to overthrow the status quo in unimaginable ways.

Skilled writers and artists, high-paid editors and performers; the creative elite who never dreamed that algorithms might imperil their jobs, **awoke** with the same economic fears as their lowest-paid help. Maybe they, too, can be replaced by machines. **Synthetic media** might be about to ruin them like **automation** killed off so many other vocations.

It's already begun: Apple just **announced** that their audiobooks will be narrated by AI instead of by their authors from now on. Perhaps **anyone's career** can vanish overnight.

The ultimate challenge of these systems is not just to any one class or group, but to all. The mechanical powers of mimicry are now so vast that it may soon be impossible to judge reality from unreality in any medium.

Since our lives are daily being played out ever more in cyberspace, the stakes cannot be higher. These new AI algorithms are already being quietly used to shape what is seen and heard, and thus to persuade audiences without their awareness. And their great power for good and ill is growing daily.

The magic of counting words

The breathtaking speed at which this new technology has evolved even in the space of a single year indicates its disruptive potential. What is perhaps more surprising, however, is that it seems to demonstrate unexpected creativity in its output, which appears sometimes better than anything people could produce.

This great leap forward grew out of efforts to develop **Natural Language Processing** (NLP) – that is, to use computers to read, process, write, and to some extent, understand documents. But in so doing, far greater powers were unlocked with more to come.

Text generators can handle speech and even manipulate ideas. They can participate in real-time conversations via online assistants or automated salespeople or philosophical chatbots and translation engines. They can literally write anything from summaries or reviews to poetry, ads, and **computer code**.

But wait – there's more, *much* more. This power is not limited just to word soup. Since human speech is intimately tied into all our senses, particularly vision, NLP can give AI **astonishing graphic capabilities** as well.

Just like literary texts, some platforms can create and alter images in any artistic style. Recently this has been extended to **architecture** and **moving images** as well. Anything that can be commanded, described, reframed, or even hinted at, can be made to appear.

These marvels are brought forth by simple verbal cues. Most of these NLP programs rely on entering a "prompt", a phrase or sentence describing the desired output and its parameters, from which the result quickly materializes – often with variations – just like magic.

The "magic", of course, is in a long chain of technical developments, some decades in the making. But the tech is deeply rooted in the most fundamental, truly magical means of expressing human thought: writing **language**.

Amazingly, these powerful systems ultimately work by simply *counting words*, noting which follows another, their associations and contexts. That is the full extent of their awareness. Anything more is just simulated.

But the simulation can be disturbingly effective. One Google engineer was **fooled** by a chatbot into declaring it sentient. He alarmed many people and **lost his job** as a result.

As **language models**, NLP AIs lack any true knowledge of facts or morality but can be glib, confident persuaders. It is tempting to think they are smarter than they really are.

They appear brilliant because the abilities and nimbleness of these programs derive largely from the size and richness of the **data sets** on which they are trained. In some cases, much of the web may be scraped, which by the way, is one reason why there are such deep and persistent problems with **AI biases**.

Bias is not their only fault. They have no awareness of truth, just argument, and in fact, they are even prone to "**hallucinations**". AI still requires a lot of intervention by humans.

Taming the whirlwind

Admitting the genie's out of the bottle is a huge understatement. **Image generators** are suddenly everywhere online. Every Big Tech megacorporation and wannabe has leapt on board, even if just to protect its own interests.

Alphabet, for instance, has been tinkering for some time with its own photorealistic image engine, **Imagen**, yet Google issued an internal "**Code Red**" alert over worries that an NLP chatbot could soon make its search engine – with its sweet ad revenues – obsolete.

That NLP chatbot is **ChatGPT**, the latest text generator from **OpenAI**, a mixed profit/non-profit AI research lab, which is behind several of the most impressive NLP setups including **GPT-3**, perhaps the most versatile text engine, and **DALL-E 2**, which wowed the world with its visualizing capabilities.

Started in 2015, **OpenAI** quickly became the industry leader. Not surprisingly, Elon Musk, tech-disrupting wunderkind, was one of its founders and still a supporter. He recently tweeted his **amusement** that **ChatGPT** had made essay-writing homework obsolete. Perhaps in reaction, New York City public schools just **banned** its use by students and teachers.

With some tools **free** to try out, OpenAI is already **selling access** to its platforms. Other companies are selling systems to automate **celebrity facial recognition** in broadcast promos, for instance, as well as to make video summaries and even **blur out nudity**.

In China, **virtual spokespeople** may be hired for about $14K/year. Over 1,000 songs with **AI vocals** have already been released there, some streaming over 100 million times. Perhaps that is why they are the first nation to really try to crack down on synthetic media with regulations requiring it to have **watermarks** or other distinguishing features.

Efforts to **detect** synthetic media took off back when **deepfakes** first shocked the world. Ironically, however, **competition** between fakers and detectors is like the **adversarial machine learning** needed to create good fakes. All they have really accomplished so far is to improve deepfakes' plausibility.

Text generators available for testing come with regulations against hate speech. Likewise, online art generators have their own baked-in **limits** to prevent misuse – such as not allowing recognizable figures, violence, sex and gore, and their training data is carefully curated to prevent any occurrences.

But already, some writers use ChatGPT to come up with plots or **compose** short stories. Controversially, **AI cover art** has been used by a major sci-fi publisher without attribution.

Shutterstock has teamed up with OpenAI to make and **market** generated art, while other commercial graphics resellers ban it entirely. GPT-3 is now **licensed** exclusively through Microsoft. Meanwhile, a study found that AI-generated faces can seem much more **trustworthy** than those of real people.

The struggle to control these platforms and their products has not really yet begun. It promises to be long and epic because it affects us all – both as creators and consumers.

Huge questions still beg answers, like who gets credited as creator and owner of a synthetic product. Is it the company that wrote the code, the people who made the sources sampled, or the guy who came up with the prompt? Who will finally control the technical magic of illusion? On that, much will depend.