Office *of* Research
Innovation *and* Commercialization

Estd. 1990

NEWSLETTER

Year **2022** | Issue **06**

Futuristic Outlook

A Product of Office of Research Innovation and Commercialization (ORIC),
University of Management and Technology, Lahore, Pakistan

Message from Co-Founder, Director-General, and Head ORIC – UMT

We live in the Modern age, where we do all over work with the help of technology. We know technology by the name “technological know-how”. Discover the latest science and technology news and videos on breakthroughs shaping tomorrow's world with Futurism. The innovation of science has a long history producing many important figures and many developments in the field. Moreover, it made communication easier for us. Humans have cleaned up and created some fantastic and sometimes orthodox inventions.

So, every researcher and faculty member should be up-to-date about innovation in their respective field; that’s why ORIC-UMT introduce the Futuristic Outlook for the UMT family to commensalism with the Innovative world.

Prof. Abid Hussain Khan Shirwani
Co-Founder, Director-General and Head ORIC
University of Management and Technology,
Lahore, Pakistan

Table of Contents

A - School of Engineering & School of System and Technology

1: OpenAI Was Founded to Counter Bad Ai, Now Worth Billions as It Does the Opposite

In spite of being founded as a humanity-benefitting nonprofit, OpenAI now appears to be doing the opposite as it considers an investment that would make it worth nearly $30 billion, built on its arguably nefarious software.

As the *Wall Street Journal* reports, insiders say OpenAI is currently weighing an offer to sell a majority of its shares to venture capital firms that would ultimately put its value around $29 billion.

The *WSJ* notes that the deal would see the Thrive Capital and Founders Fund firms purchasing at least $300 million in OpenAI shares, and roughly doubling the company's valuation and making it one of the highest-valued startups in the world.

Turned Tables

The OpenAI of today is a far cry from its altruistic, not-for-profit dreams from 2015, when Elon Musk co-founded it with several other Silicon Valley types. Most of those founders, including Musk, are no longer with the lab-turned-company.

After initial proclamations about building "safe" AI in its early years, OpenAI abruptly turned coat in 2019 when Y Combinator's Sam Altman, who was and remains the company's CEO, created a for-profit arm to attract investment. The gambit worked, with Microsoft investing a cool $1 billion in OpenAI later in 2019.

Along the road to for-profit status, however, OpenAI lost Musk, who openly stated just a month before announcements about the company's for-profit arm that he "didn't agree" with the direction it was headed.

Scary Smart

In the ensuing years, OpenAI's powerful neural networks have gotten tons of press for their sophistication — though not all that press has been good. Indeed, the same year it went for-profit, the firm itself initially claimed that its text-generating GPT-2 algorithm was too dangerous for public consumption — but then went ahead and released it months later anyway.

In 2022, the company made further waves first with its next-level DALL-E2 image generator and then its ChatGPT software, which generates text so human-sounding that academics had a veritable freakout over students potentially using it to write their papers for them.

And at the end of the day, the fact that it went from a pro-social research project to an industry-changing behemoth in seven years is enough to give anyone pause.

That it may or may not end up releasing powerful AI into society — and likely replacing countless human workers — when its founders initially wanted to do the opposite is, frankly, not a great look.

2: Artist Says They Were Banned Because Their Art Looked Like AI, Even Though They're Human

Vietnam-based digital artist Ben Moran simply wanted to share their latest piece on r/Art, Reddit's premier art subreddit. Instead, they were abruptly banned by moderators who accused them of generating the work using AI, which is banned on the forum.

Moran took to Twitter to share their grievances, sharing a screenshot of their exchange with one of the forum's moderators. They offered to send the raw Adobe Photoshop file that would transparently reveal their process, but the furious moderator shut Moran down.

"I don't believe you," the moderator responded. "Even if you did 'paint' it yourself, it's so obviously an AI prompted design that it doesn't matter."

"If you really are a 'serious' artist," they continued, "then you need to find a different style, because A) no one is going to believe when you say it's not AI, and B) the AI can do better in seconds what might take you hours."

Friendly Fire

Clearly, the incident is emblematic of the anti-AI sentiment sweeping through the art community at large, but at times the well intentioned stance can reach a fever pitch.

AI image generators like Stable Diffusion and Midjourney are trained on datasets that use images pulled from large art communities like ArtStation without artists' permissions, which many would argue constitutes theft.

As such, Moran, who runs their own art studio, is also against the development of AI art — which makes the moderator's trigger happy decision all the more ironic.

"There's no passion if you can create an artwork that way," they told Vice. "And the biggest problem is that I worry about the development of AI art, all of the artists will lose their passion to create a painting."

"In my opinion, the development of AI is good for industry, not for the art community and artists," they later added.

Evidently, the subreddit's moderators are also against AI art, but for much more pragmatic reasons.

"We don't necessarily have anything against AI Art, but when people can churn it out so quickly and easily if it's allowed the sub becomes nothing but AI art rather quickly," one moderator explained to Vice.

One of Many

In the wake of Moran's story, drama-vulturous trolls began to brigade and spam r/Art, forcing moderators to temporarily private the subreddit.

It doesn't appear that Moran will be unbanned any time soon. But maybe they're better off, considering the contemptuous dismissiveness on display.

Unfortunately, these kinds of fiascos will likely become more commonplace as the looming encroachment of AI threatens artists, forcing many into panic-mode.

3: Scientists Say They're Now Actively Trying to Build Conscious Robots

"This topic was taboo," Hod Lipson, the mechanical engineer in charge of the Creative Machines Lab at Columbia University, told *The New York Times*. "We were almost forbidden from talking about it — 'Don't talk about the c-word; you won't get tenure' — so in the beginning I had to disguise it, like it was something else."

Consciousness is one of the longest standing, and most divisive, questions in the field of artificial intelligence. And while to some it's science fiction — and indeed has been the plot of countless sci-fi books, comics, and films — to others, like Lipson, it's a goal, one that would undoubtedly change human life as we know it for good.

"This is not just another research question that we're working on — this is *the* question," the researcher continued. "This is bigger than curing cancer."

"If we can create a machine that will have consciousness on par with a human, this will eclipse everything else we've done," he added. "That machine itself can cure cancer."

Of course, the biggest issue that the industry runs into with the question of consciousness — you know, other than the technological challenge that it would undoubtedly be — is the fact that, well, concept itself doesn't really have a firm definition, in the field or beyond it. Philosophically, consciousness is vague and debatable. And scientifically, as the *NYT* notes, efforts to tidily nail consciousness down to specific brain functions or otherwise signifiers tends to fall flat. There are also a number of deeply ethical questions that arise with just the concept of machine consciousness, particularly related to machine labor.

For his part, Lipson has his own definition of consciousness, that being the capacity to "imagine yourself in the future," as explained by the *NYT*. Thus, the engineer has focused a great deal of his career on working to build adaptable machines — generalized intelligence that can learn to evolve by machine-learned natural selection, responding in kind to changing environments and errors or injury within the mechanical body.

In other words: a machine with the ability to not only learn more and correct responsively, as machines do now, but a machine with the ability to *imagine* how it might be better, and evolving to suit that vision. It's a slight distinction, but an important one.

Even so, considering that consciousness has no set definition, it's hard to cosign any particular one.

It's also impossible to ignore the fact that humans really, really like to anthropomorphize just about anything we can, from toasters to pets to vegetables and more. Such a tendency is exceedingly present in the fields of robotics and artificial intelligence, where those building machines constantly project human features, both physical and intellectual, onto the devices that they create.

And to that end, it's always worth asking whether those machines actually possess the qualities that researchers like Lipson imagine they one day will, or whether scientists, as a result of their own very human urges, are projecting humanity — or nature, or consciousness, or whatever you want to call it — onto very much not conscious machines, reflecting back what they hope to see, rather than what is.

"There's the hubris of wanting to create life," Lipson told the *NYT*. "It's the ultimate challenge, like going to the moon."

4: Deep Learning Expert Says GPT Startups May Be in for a Very Rude Awakening

Generative AI exploded into the mainstream last year. Led by the Elon Musk cofounded OpenAI — the creator of both DALL-E 2, a text-to-image generator, and ChatGPT, an impressive text-generating system — the industry has absolutely exploded, as these generative tools and others, notably the image-generating systems Stable Diffusion and Midjourney, have dazzled investment firms and the broader public alike.

"Generative AI is well on the way to becoming not just faster and cheaper, but better in some cases than what humans create by hand," reads a blog post by top investment firm Sequoia Capital, published September 2022. "If we allow ourselves to dream multiple decades out, then it's easy to imagine a future where Generative AI is deeply embedded in how we work, create and play."

But despite the hefty amount of investment cash — an estimated $1.37 billion across 78 deals in 2022 alone, according to *The New York Times* — that VCs are throwing at generative AI companies, not everyone in the field is convinced that these generative machines are really the Earth-shifting force that both creators and investors believe them to be.

"The current climate in AI has so many parallels to 2021 web3 it's making me uncomfortable," François Chollet, an influential deep learning researcher at Google and the creator of the deep learning system Keras, wrote in a blistering Twitter threat. "Narratives based on zero data are accepted as self-evident."

In other words, Chollet is arguing that in eerily similar fashion to the blockchain bubble, hype — as opposed to firm data and proven results — is in the industry driving seat. And considering the current state of affairs over in Web3land, if Chollet's right? A failure for VC-predicted returns to materialize could spell some grim consequences for the broader AI industry.

"Everyone is expecting as a sure thing 'civilization-altering' impact (and 100x returns on investment) in the next 2-3 years," he continued. "Personally I think there's a bull case and bear case. The bull case is way way more conservative than what the median person on my TL considers as completely self-evident."

The bull case, he believes, is that "generative AI becomes a widespread [user experience] paradigm for interacting with most tech products." But Artificial General Intelligence (AGI) — AI that operated at the level of a human or above — remains a "pipe dream." So, startups based on OpenAI tech might not be rendering us humans obsolete quite yet, but they could well find a long-term role within specific niches.

The bear case, meanwhile, would be a scenario in which large language models (LLMs) like GPT-3 would find "limited commercial success in SEO, marketing, and copywriting niches" and ultimately prove to be a "complete bubble." (He does offer that image generation would be far more successful LLMs, but would peak "as an XB/y industry" around 2024.)

That all said, Chollet believes the most likely case is somewhere in between.

But even so, even Chollet's best case prediction is still *way* out of alignment with VC enthusiasm, where acolytes are writing checks sized to match their optimism for the tech — OpenAI, for example, is in talks to close an investment deal that would bring the company's value to nearly $30 billion.

"It's the new 'mobile' kind of paradigm shift that we've been all waiting for," Niko Bonatsos, an investor at the venture capital firm General Catalyst, told the *NYT*. "Maybe bigger, too."

To investors' credit, the algorithms *are* cool. Text-to-image-generators are genuinely impressive, and open up broad new creative frontiers for people without Photoshop chops. GPT systems, at the very least, are lots of fun to play around with.

That said, they also have a lot of problems. ChatGPT, for example, isn't always right about the very confident statements it provides, and experts fear that the tech may make it very simple to easily and efficiently generate misinformation. And though industry CEOs are open about the fact that these programs are still in relative infancy, the very real potential for destruction and blurred creative lines that they present is tough to ignore, even when backdropped against a bright — if still mostly imagined — future.

And to Chollet's point, it takes more than a product being cool and fun, or even very useful for niche things, to really be a "paradigm shift." VCs may well be taking a much bigger risk than they think they are, both fueling and feeding off of a hype cycle of half-baked products, rather than making measured calls about a situationally promising, though still quite limited, burgeoning market.

"The fact that investment is being driven by pure hype, by data-free narratives rather than actual revenue data or first-principles analysis," Chollet's thread concluded. "The circularity of it all — hype drives investment which drives hype which drives investment... narratives backed by nothing somehow end up enshrined as self-evident, common wisdom simply because they get repeated enough times by enough people."

"Everyone starts believing the same canon (especially those who bill themselves as contrarians)," he said.

Disney's obsession with de-aging technology is only ramping up, because it's now developed an AI tool that can automatically alter the age of actors, *Gizmodo* reports.

Well, "re-aging," as Disney calls it, would be more accurate. The tool, dubbed the Face Re-aging Network, or FRAN, is capable of making actors look younger as well as older, and promises to drastically speed up visual effects processes that take weeks to complete when undertaken manually (or, *ahem,* abusively).

Some of those manual processes require painstakingly painting each 2D frame of an actor's face, or replacing an actor with a digital puppet.

But by using FRAN, an AI does most of the legwork, and it crucially "complements traditional re-aging techniques that already work well in film production," wrote Disney researchers in an accompanying paper.

FRAN looks significantly more convincing than preceding AI models that struggled with motion. Too much movement or too odd an angle and artifacts would begin to creep in and jarringly disappear, while a face could lose its identity from becoming too generic.

The Disney designed AI tool works by overlaying alterations, like wrinkles, to specific parts of the face it detects should be older or younger, while leaving the remaining parts unaltered. It does this on separate layers, allowing artists to tweak and add to the results by hand. To that end, Disney claims FRAN is "production-ready."

But for FRAN to be this effective, researchers first had to create their own database of thousands of randomly generated faces, which they then altered using existing age modification tools. The sheer volume of generated and then altered faces that resulted gave plenty of material to train FRAN with.

Impressive as it is, FRAN isn't flawless. Aging, after all, isn't just accumulating wrinkles, and FRAN seems to struggle to capture the incredible nuance of the process. Likewise, FRAN seems to largely approach de-aging by simply making its subjects' skin smoother, which can easily end up in the realm of overkill.

But FRAN doesn't have to be perfect. It could give VFX artists a massive head start, saving weeks, if not months, of work and millions of dollars. And that on its own is potentially worthwhile.

5: Italy Invents Robot Titaly Invents Robot That Carves Sculptures Out of Marble Like Michelangelo

An Italian startup called Robotor has invented a machine that's nearly as good at carving marble masterpieces out of Carrara marble as its Renaissance-era predecessors.

As *CBS News* reports, Robotor founder Giacomo Massari is convinced his robot-machined marble statues are nearly as good as those made by humans. Almost.

"I think, let's say we are in 99 percent," he told *CBS*. "But it's still the human touch [that] makes the difference. That one percent is so important."

Massari even went a step further arguing that "robot technology doesn't steal the job of the humans, but just improves it" — a bold statement, considering the mastership that went into a form of art that has been around for thousands of years.

Art vs. Robartist

Robotor's latest robot sculptor, dubbed "1L," stands at 13 feet tall, a zinc alloy behemoth capable of carefully chipping away at a slab of marble day and night.

The company claims the technology is nothing short of revolutionary.

"The quarried material can now be transformed, even in extreme conditions, into complex works in a way that was once considered unimaginable," the company boasts on its website. "We are entering a new era of sculpture, which no longer consists of broken stones, chisels and dust, but of scanning, point clouds and design."

Unsurprisingly, not everybody is happy with robots taking over the craft, arguing that something important could be lost in the process of modernizing processes with new technologies.

"We risk forgetting how to work with our hands," Florence Cathedral sculptor Lorenzo Calcinai told *CBS*. "I hope that a certain knowhow and knowledge will always remain, although the more we go forward, the harder it will be to preserve it."

6: New AR Glasses Translate Conversations in Real Time

TCL — a company best known for its affordable TVs — has been trying to establish a foothold in the VR and AR space. Its latest and likely boldest entry comes in the form of the RayNeo X2, a pair of augmented reality smart glasses that can, among other features, translate conversations in real time.

Journalists recently got a hands on — or heads up — look at the RayNeo X2s at the Consumer Electronics Show that kicked off Thursday in Las Vegas.

TCL's X2s look like regular glasses frames, but hilariously oversized. Still, they're powered by some respectable hardware, running on Qualcomm's Snapdragon XR2 platform that's used in the Oculus Quest 2 VR headset.

The lenses themselves house MicroLED waveguide displays, and if you have bad vision, come equipped with adjustable prescription inserts.

By tapping on the right temple, you can navigate through the X2's menus and activate its translation feature, which can not only translate text you're looking at, but translate and transcript someone you're speaking to, live. According to Scott Stein at CNET, he was able to understand someone speaking to him in Chinese.

The TCL augmented reality glasses can translate literally right before your eyes. They’re also far too big for my head and with a fringe AND a mask, I look just a tad silly. Still super cool #CES2023 pic.twitter.com/KXsdIntPol

— Asha Bee (@ashabeeeee) January 6, 2023

Downsize Me

The specs might be an impressive stepping stone, but their clunky size indicates that AR glasses still have a way to go before you don't feel ridiculous wearing them. As Engadget notes, it's a little worrying that a company like TCL, which specializes in displays, couldn't get its own any smaller.

However, that doesn’t seem to be a problem for Google's unnamed prototype AR glasses that also boast a similar live translation feature, which Google teased last summer. Unlike the X2s, Google's glasses are less feature-packed, and can't capture images. Maybe the ideal sweet-spot for AR is not having the glasses do everything, and just having them be good at a few things, if that means they won't need to be absurdly large.

TCL expects to start rolling outs its glasses to developers by the end of Q1 and is expected to be available to consumers by July, according to *Gizmodo*.

7: Microsoft Working on Deal to Add Openai's Gpt into MS Word

Microsoft is reportedly in talks with OpenAI to invest upwards of $10 billion into the artificial intelligence company — and use its powerful text generator tools not just in its Bing search engine, but in its Office suite as well.

First reported by *The Information*, insiders say Microsoft is looking to strengthen its existent partnership with the Elon Musk-founded AI company. They even say that the tech giant has already been quietly integrating OpenAI's text generation software into Word via its autocomplete suggestions.

According to other unnamed sources who spoke to Semafor and *Bloomberg*, that relationship-strengthening investment is to the tune of about $10 billion. The latter publication added that the deal between the companies — which have been working together on Microsoft's Azure AI system since at least 2019, when Microsoft invested $1 billion in OpenAI — have been in negotiations about the proposed deal for months.

"We do not comment on speculation," a Microsoft spokesperson told us in response to questions about the reporting.

Mean Girls

If the deal goes through (or, indeed, if Microsoft is already using OpenAI's text-generating algorithms to strengthen its autocomplete suggestions), it could represent a sea change in the public-facing availability of the company's next-gen AI — especially in the wake of its release of ChatGPT, which has spurred controversy for churning out text that in some contexts is almost indistinguishable from that written by a human.

Since releasing ChatGPT, which is built on its GPT-3 language generation model, OpenAI has caught tons of flak from academics and others concerned with the lengthening specter of AI. The one-time nonprofit, which later switched to a for-profit model and by October valued at $20 billion, has also reportedly been in talks with other investors, and could soon be worth nearly $30 billion if those deals go through.

It's safe to say that OpenAI is, at this stage, the most popular girl in school — and like with anything else that's popular, it's subject to levels of scrutiny of the sort that haunt the dreams of other startup founders.

8: Neuroscientist Warns That Current Generation Ais Are Sociopaths

Without consciousness, Princeton neuroscientist Michael Graziano warns in a new essay published by *The Wall Street Journal*, artificial intelligence-powered chatbots are doomed to be dangerous sociopaths that could pose a real danger to human beings.

With the rise of chatbots like ChatGPT, powerful systems that can imitate the human mind to an impressive degree, AI tools have become more accessible than ever before. But those algorithms will glibly fib about anything that suits their purpose. To make align them with our values, Graziano thinks, they're going to need consciousness.

"Consciousness is part of the tool kit that evolution gave us to make us an empathetic, prosocial species," Graziano writes. "Without it, we would necessarily be sociopaths, because we'd lack the tools for prosocial behavior."

Empath Machine

Sure, ChatGPT isn't about to leap out of the screen and murder somebody. But giving artificial intelligence more and more agency could have very real consequences we should be wary of in the not-so-distant future.

To make them more docile, in Graziano's thinking, we should allow them to realize that the world is filled with other minds other than their own.

There's one problem, though: we don't have an effective way to know if an AI is conscious or not. In fact, philosophically, it's hard to even really nail down whether other people are conscious.

"If we want to know whether a computer is conscious, then, we need to test whether the computer understands how conscious minds interact," Graziano argues. "In other words, we need a reverse Turing test: Let's see if the computer can tell whether it's talking to a human or another computer."

If we can't figure those tricky questions out, he fears we could face grim consequences.

"A sociopathic machine that can make consequential decisions would be powerfully dangerous," he wrote. "For now, chatbots are still limited in their abilities; they're essentially toys. But if we don't think more deeply about machine consciousness, in a year or five years we may face a crisis."

9: New Microsoft Ai Can Clone Your Voice from Three Seconds of Audio

Microsoft says its new text-to-speech AI can clone your voice, tone and all, from a three-second snippet of audio. It's called VALL-E, and we have mixed feelings.

The underlying tech behind the system, which Microsoft refers to in a new paper as a "neural codec language model," is complex — but in practice, using the system appears to be wildly simple. Plug in an audio sample, then some text, and voilà: real-sounding speech.

Of course, many text-to-speech apps already exist. Most news sites, us included, for example offer machine-powered dictation services, while speaking assistants like Siri and Alexa are hugely popular.

Most existing speech-generating programs, however, require a large amount of input. They also haven't exactly figured out how to make AI voices sound particularly human, mostly due to the fact that emotional tone and tiny inflections are incredibly complex to convey.

If Microsoft's system really can deliver on the tone piece, with that little required on the input side? That's a big deal.

Mixed Feelings

According to its creators, VALL-E has a number of applications, including "zero-shot TTS, speech editing, and content creation," adding that OpenAI's GPT-3 language modeling system — a technology that Microsoft, per its absolutely massive investment into OpenAI, has put a ton of resources into and is already working into several products — would be a particularly useful piece of tech to combine with the new speech generator as a means of churning out content.

And if the latter is something you might be into, Microsoft does have a point. Theoretically, by combining VALL-E and GPT-3 — two powerful pieces of AI-driven tech — you could patch together a ton of real-sounding, believable content, *incredibly* quickly.

But that, of course, is where some ethically-tricky hypotheticals enter the picture.

Fake and misleading sound bytes are obviously a concern here — after all, if you only need three seconds of audio, you could theoretically use anything from a celebrity interview to a real person's Instagram story to impersonate someone.

That said, Microsoft was careful to address that concern, explaining that it's refraining — at least for now — from making the code open source due to "potential risks in misuse of the model." They also claim that they're working on

incorporating some kind of system that detects whether audio was created using VALL-E, maybe they should ask their friends over at OpenAI how easy that really is.

10: A New Scientific Paper Credits ChatGPT AI as a Coauthor

OpenAI's viral text generator ChatGPT has made some serious waves over the last couple of months, offering the public access to a chatbot that's arguably a vast improvement over its numerous and deeply flawed predecessors.

In fact, one group of researchers is now so confident in its capabilities that they've included it as a coauthor in a scientific paper, marking yet another inflection point in the rise of AI chatbots and their widespread use.

A not-yet-peer-reviewed paper on ChatGPT's ability to pass the United States Medical Licensing Exam (USMLE) lists 11 researchers affiliated with the healthcare startup Ansible Health — and ChatGPT itself, raising eyebrows amongst experts.

"Adding ChatGPT as an author was definitely an intentional move, and one that we did spend some time thinking through," Jack Po, CEO of Ansible Health, told *Futurism*.

The move sparked a debate online about AI chatbots playing an active role in current scientific research, despite often being unable to distinguish between truth and fiction.

Some users on social media called the move "deeply stupid," while others lamented the end of an era.

The Ansible Health paper is part of a greater trend. In a report this week, *Nature* found several more examples of scientists listing ChatGPT as an author, with at least one being chalked up to human error.

The move has publishers scrambling to adjust to a new reality in which chatbots are actively contributing to scientific research — to various degrees, that is.

Leadership at the repository *bioRxiv*, which published Ansible Health's preprint back in December, told *Nature* that they're still debating the pros and cons of allowing ChatGPT to be listed as an author.

"We need to distinguish the formal role of an author of a scholarly manuscript from the more general notion of an author as the writer of a document," *bioRxiv* co-founder Richard Sever told the publication.

Po, however, who wasn't listed as an author himself but copied senior author Victor Tseng on emails to Futurism, defended his academic peers' decision to include ChatGPT as an author.

"The reason why we listed it as an author was because we believe it actually contributed intellectually to the content of the paper and not just as a subject for

its evaluation," he told us, "just like how we wouldn't normally include human subjects/patients as authors, unless they contributed to the design/evaluation of the study itself, as well as the writing of the paper."

Po also argued that ChatGPT didn't provide "the predominant scientific rigor and intellectual contributions."

"Rather, we are saying that it contributed similarly to how we would typically expect a middle author to contribute," he explained, expressing how he was taken aback by "some of the reactions online at the moment."

Po went as far as to argue that he would be "shocked" if ChatGPT and other large language models (LLMs) out there "isn't used in literally every single paper (and knowledge work) in the near future."

But seeing AI chatbots as "authors" still isn't sitting well with publishers.

"An attribution of authorship carries with it accountability for the work, which cannot be effectively applied to LLMs," *Nature* editor-in-chief Magdalena Skipper told *Nature*'s news arm.

"We would not allow AI to be listed as an author on a paper we published, and use of AI-generated text without proper citation could be considered plagiarism," *Science* editor-in-chief Holden Thorp added.

For his part, Po doesn't understand what all the fuss is about.

"I think some of this debate is missing the point and just shows how much angst there is from knowledge workers who are now under (some might argue existential) threat," Po told *Futurism*, arguing that generative adversarial networks, machine learning frameworks capable of producing entirely new and photorealistic images, have already been around for a decade producing novel input data and making contributions to scientific papers.

The debate over ChatGPT being included as an author on scientific papers is symptomatic of a considerable push forward for AI-powered tools and the resulting reactions.

Do these responses amount to kneejerk reactions — or are they legitimate qualms over algorithms meddling with the affairs of human scientists?

The debate is likely only getting started, and as *Nature* notes, several papers are set to be published crediting ChatGPT as coauthor in the near future.

But if there's one thing that both Po and scientific publications can agree on, it's the fact that the AI chatbot's feedback will need to be taken with a massive grain of salt.

After all, its knowledge base is only so good as the data it was originally trained on.

11: Watch A Boston Dynamics Robot Deftly Toss A Bag of Tools to A Construction Worker

Boston Dynamics' bipedal robot Atlas has picked up even more impressive new skills.

The parkour expert showed off its problem solving skills in a video titled "Atlas Gets a Grip," released by the robot maker today. In it, the bot navigates a mocked-up construction site with ease — and even tosses a bag of tools to a construction worker standing on top of some scaffolding.

Atlas didn't stop there. After completing its task, the robot effortlessly pulled off a backflip with a twist.

Sure, the video was almost certainly extensively rehearsed and carefully programmed ahead of time, but it's nonetheless another impressive demonstration of the company's industrious and athletic biped.

This latest stunt is meant to demonstrate how Atlas can actually be helpful, and not just dance the night away.

"We're not just thinking about how to make the robot move dynamically through its environment, like we did in Parkour and Dance," Boston Dynamics' team lead on Atlas, Scott Kuindersma said in a behind the scenes video, referring to previous videos featuring Atlas the company had released over the years.

"Now, we're starting to put Atlas to work and think about how the robot should be able to perceive and manipulate objects in its environment," he added.

The company has already started selling two of its robots, dubbed Stretch and Spot, to customers. The first is a wheeled, one-armed warehouse robot, while the latter is quadrupedal robodog that has already been dispatched to surveil construction sites, assist firefighters, and even poke around a SpaceX launch site.

Kuindersma argued in the video that upright-standing robots could do well in manufacturing, factory, and construction settings — "spaces that were traditionally designed for humans to do work in."

But, as Atlas controls lead Ben Stephens acknowledged in a press release, they're still a "long way off" from humanoid robots that can take over manual labor and potentially dangerous tasks.

"Manipulation is a broad category, and we still have a lot of work to do," he added. "But this gives a sneak peek at where the field is going."

B- Institute of Aviation Studies

1: Airbus to Strap Hydrogen Fuel Cell Engine to Massive Superjumbo Jet

Airbus has announced that it's strapping an experimental hydrogen fuel cell engine to a modified A380 superjumbo jet, an exciting new foray into the concept of powering commercial passenger aircraft with hydrogen alone.

The company says it's planning to start test flights in 2026 and launch a fully operational first zero-emissions aircraft by 2035 — an ambitious timeline, considering that we're only starting to understand the potential of the idea.

But moving to hydrogen could dramatically cut the carbon footprint of air travel, which has historically been a massive contributor, representing 2.8 percent of global CO2 emissions. Of course, that's all if the company can actually pull it off.

ZEROe

As a first step, Airbus is planning to test its ZEROe Fuel Cell Engine, which it unveiled at its Airbus Summit on this week, attached to the wing of a modified A380 commercial jet.

"In terms of aerodynamics, the A380 is a very stable aircraft," said Mathias Andriamisaina, head of ZEROe demonstrators and tests at Airbus, in a statement. "So the pod attached to the rear fuselage via the stub doesn't pose much of an issue."

Airbus already showed off previous concepts of aircraft that could make use of both hydrogen fuel cells and traditional combustion engines. The company, however, believes aircraft could still achieve flight with hydrogen alone.

"At scale, and if the technology targets were achieved, fuel cell engines may be able to power a 100-passenger aircraft with a range of approximately 1,000 nautical miles," vice president of Zero-Emission Aircraft Glenn Llewellyn said in the statement.

Running on Gas

But realizing its vision could prove difficult. Hydrogen is far less energy dense compared to kerosene, making it a considerably less efficient fuel by weight.

Then there's the fact that the production of hydrogen has proven challenging, costly, and potentially environmentally harmful as well.

That hasn't stopped airlines and aircraft manufacturers from pursuing the idea, at least on a lip service level. In fact, there has been a groundswell in companies attempting to turn the idea into a reality.

Just earlier this week, Rolls-Royce and partner budget airline EasyJet announced they 'd pulled off the "world’s first run of a modern aero engine on hydrogen."

While converting air travel to run on hydrogen could take many years, experts believe the industry could start the process with short-haul flights at first, which could still represent a sizeable cut in emissions.

C – School of Sciences

1: Stanford Scientists Warn That Civilization as We Know It Will End in "Next Few Decades"

On New Year's Day, several Stanford scientists joined *CBS'* Scott Pelley on the program "60 Minutes" to discuss the global mass extinction crisis. Spoiler: no one had any good news.

Tony Barnosky, a Stanford biologist whose work involves using fossil records to map changes in ecosystems over time, told *CBS* that his work suggests that extinction rates today are moving at roughly 100 times the rate typically seen in Earth's four-billion-year known history of supporting life.

According to Barnosky, such rapid population loss means that Earth is *currently* experiencing the worst mass extinction episode since the dinosaurs. And while Earth itself has repeatedly recovered from mass extinction events, the vast majority of the life existing on our planet at the time has not.

Unfortunately, that may well include us humans — or, at least, the trappings of our technological civilization.

"I and the vast majority of my colleagues think we've had it," Barnosky's Stanford colleague Paul Ehrlich, who also appeared on the show, told Pelley, "that the next few decades will be the end of the kind of civilization we're used to."

That grim reality, according to the researchers, means that even if humans manage to survive in some capacity, the wide-reaching impacts of mass extinction — which include habitat destruction, breakdowns in the natural food chain, soil infertility, and more — would cause modern human society to crumble.

"I would say it is too much to say that we're killing the planet, because the planet's gonna be fine," said Barnosky. "What we're doing is we're killing our way of life."

In other words? If humans don't drastically course-correct, the havoc we're wreaking on the planet will very unpleasantly do so for us. It's a grim warning, but one that other experts are echoing.

Ehrlich, it's worth noting, is somewhat of an overpopulation and mass extinction icon. He published "The Population Bomb," one of the first modern books on the dangers of excess human development and population growth, back in 1968, and was considered an alarmist for the controversial predictions he made at the time. Although not all of his contentious forecasts came true, two big ones — that greenhouse gases would melt polar ice, and that humanity would overwhelm the

wild — have undoubtedly since materialized. And sadly, his reasoning for their realization feels depressingly familiar.

According to Ehrlich, the problem is "too many people, too much consumption and growth mania" — a reality that few would likely argue is showing any meaningful sign of slowing down.

"Humanity is not sustainable. To maintain our lifestyle (yours and mine, basically) for the entire planet, you'd need five more Earths," Ehrlich told his interviewer. "Not clear where they're gonna come from."

"Resources that would be required, the systems that support our lives, which of course are the biodiversity that we're wiping out," the 90-year-old researcher added. "Humanity is very busily sitting on a limb that we're sawing off."

2: Caltech Launches Solar Array to Test Beaming Energy Down To Earth

On Earth, solar power is at the mercy of clouds and nighttime. But in space, the thinking goes, you could have virtually unmitigated access to direct sunlight.

Of course, the cost and efficiency of getting that hardware into orbit remains an unknown, in addition to the nearly insurmountable feat of getting that energy down to Earth.

That's why it's so intriguing that researchers from the California Institute of Technology have actually sent a space-based solar power array into space aboard SpaceX's latest Falcon 9 launch, with the goal of testing the feasibility of the concept.

"No matter what happens, this prototype is a major step forward," said project codirector and Caltech professor of electrical and medical engineering Ali Hajimiri in a press release.

Test Triptych

Dubbed the Space Solar Power Demonstrator (SSPD), the orbital solar array weighs a hefty 110 pounds as scientists have jam-packed it with experimental technology. As such, the SSPD comprises three distinct experiments.

First is the Deployable on-Orbit ultraLight Composite Experiment (DOLCE), a deployable six-feet-by-six-feet structure that's intended to be a small scale test of the architecture that would form a full-sized array.

Next is probably the most exciting part: the Microwave Array for Power-transfer Low-orbit Experiment (MAPLE). As the name suggests, this experiment addresses the challenge of using wireless power transmission to send power back to Earth by testing an array of microwave power transmitter that will beam energy at two target receivers in space.

And last up is ALBA. What it stands for is mysteriously undisclosed, but we do know it's a collection of 32 different types of photovoltaic cells, the devices that collect and convert energy from sunlight. Scientists will use the test to single out the cells that best withstand the environment of space.

Sunny Schedule

DOLCE is first up, planned to be deployed as soon as scientists gain access to SSPD, according to the project's other co-director Sergio Pellegrino, a professor of aeronautics and civil engineering at Caltech and a senior research scientist at NASA's Jet Propulsion Laboratory.

"We should know right away if DOLCE works," he added in the release, due to the relatively simple nature of the test and a live camera feed that will immediately confirm the results.

But MAPLE and ALBA will require extensive testing before the technology can be properly evaluated — up to six months, in ALBA's case.

In any case, the test could be a milestone in determining whether space based solar power is just a pipe dream or something worth throwing money at. We'll be watching.

3: Engineers Experimenting with Batteries Made Using Wood Waste

As the transition to electric vehicles starts to feel inevitable, the demand for batteries continues to soar. But even though EVs are touted as more environmentally friendly, both sourcing and disposing of the materials used in their batteries has rightfully raised questions over sustainability.

Now, the BBC reports that Finnish pulp and paper manufacturer Stora Enso — one of the world's largest owners of private forest — has hired engineers to explore a tantalizing solution: using a polymer found in trees, called lignin, as a crucial battery ingredient.

Most batteries contain electrodes known as cathodes and anodes, which facilitate the flow of charged particles called ions. These ions are more or less stored in the anode when a battery is charged, and are released through the cathode when the battery is discharged to supply power. Because lignin contains carbon, it could potentially be used to form the anode of a battery, replacing materials like graphite that are currently in common use.

According to the BBC, manufacturing synthetic graphite currently requires heating carbon at up to nearly 5,500 degrees Fahrenheit for weeks at a time — a very energy intensive process.

Byproduct Battery

Instead, what Stora Enso's so-called "Lignode" solution possibly offers is using the lignin recovered from the waste pulp that's produced while making paper and wood products.

One upside is that this approach, in theory, wouldn't require additional trees to be cut down — a boon, so long as the company's forestry practices are as one-hundred-percent sustainable as it purports them to be.

But better yet, Lignode head Lauri Lehtonen claims that heating the lignin into a carbon structure like graphite requires far lower temperatures than graphite itself, saving energy in the process.

Power Play

Even if lignin is everything Stora Enso makes it out to be, it may have trouble competing with the graphite that's already used, because graphite is simply too good at what it does.

"I just don't think it's going to be a big enough step-change in terms of cost or performance to replace the entrenched graphite," Wyatt Tenhaeff, a professor of

chemical engineering at the University of Rochester who's experimented with anodes made from lignin, told the BBC.

Still, Tenhaeff thinks lignin is "really cool" and found that it could indeed be used to make anodes at a potentially lower cost.

4: Traveling Faster Than Light Would Mean Experiencing Multiple Timelines Simultaneously

An international team of physicists has cooked up with a new theory that could allow for objects to travel faster than the speed of light — and while they say it wouldn't technically violate the laws of physics, it *would* lead to phenomena so mind-bending that it'd make the end of "Interstellar" look normal.

To wit, according to *Science Alert*'s analysis of the team's new paper in the journal *Classical and Quantum Gravity*, travelers moving faster than the speed of light would "experience" multiple timelines at once.

How, you might ask? Through a "1+3 space-time" framework, which flips the idea of three spatial dimensions and one-time dimension in favor of three-time dimensions and a single spatial dimension.

"The other three dimensions are time dimensions," said coauthor Andrzej Dragan from the University of Warsaw in Poland in statement about the work. "From the point of view of such an observer, the particle 'ages' independently in each of the three times."

Does that make any sense from our puny human perspective? We're honestly not sure.

But it is a mind-bending exploration of an exotic what-if, not to mention yet another example of researchers playing around with the decidedly "Star Trek" concept of faster-than-light travel. An added bonus? In theory, the scientists say, the framework might even help reconcile Einstein's theory of relativity with quantum mechanics, two sets of rules in physics that have yet to play nicely after many decades.

"This new definition preserves Einstein's postulate of constancy of the speed of light in vacuum even for superluminal observers," Dragan said in the statement. "Therefore, our extended special relativity does not seem like a particularly extravagant idea."

Look, it sounds very cool. But then again, so did "Tenet" — and we all saw how that one turned out.

5: Startup Says It's Started Releasing Chemical into Atmosphere to Dim Sun

A small environmental startup called Make Sunsets has started injecting sulfur dioxide particles into the stratosphere in an effort to ever-so-slightly cool the planet, a provocative and unproven method of combating a growing climate crisis.

As *The Washington Post* reports, the company's CEO and founder Luke Iseman released six-foot helium balloons filled with sulfur dioxide over Baja California in Mexico last year.

The goal was to have the balloons release sulfur dioxide particles at high altitudes, reflecting the Sun's heating rays back into space, a process commonly referred to as solar geoengineering.

According to *MIT Technology Review*, the stunt — despite its tiny scale and unsophisticated methodology — likely marked the first time anyone has actually attempted such a feat.

"We joke slash not joke that this is partly a company and partly a cult," Iseman told *MIT Tech* late last year.

Make Sunsets is blazing ahead despite plenty of criticism and uproar over previous geoengineering efforts. For one, as critics are quick to point out, we don't even know if the idea will work — or if it could have unintended consequences.

"The current state of science is not good enough... to either reject, or to accept, let alone implement" solar geoengineering, Janos Pasztor, executive director of the Carnegie Climate Governance Initiative, told *MIT Tech* in an email, adding that it is a "very bad idea."

Despite its many critics, the idea of geoengineering has picked up quite a bit of momentum lately. In 2021, the National Academies of Science recommended that the US should "cautiously pursue" the idea given the growing climate crisis.

And earlier this week, a team of UN-backed scientists released a report, detailing the progress of a landmark 1989 treaty called the Montreal Protocol that regulates ozone-damaging chemicals — which included an entire chapter dedicated to the concept of solar geoengineering.

In short, the overwhelming majority of scientists are in agreement that more research needs to be done before we can start sending copious amounts of sulfur dioxide into the atmosphere to ward off the Sun's warming rays.

There are plenty of other reasons to be skeptical. For instance, there's the fact that solar geoengineering efforts may affect entire regions of the world, thereby ignoring geopolitical boundaries outright.

"Who gets to say it’s okay to do this, and if it’s done, how much is done and where and under what protections and with whom in charge?" UCLA environmental law professor Edward Parson told *The Washington Post*. "These are unexplored questions."

In other words, coming to an international consensus once the effects of solar geoengineering are better understood, could prove difficult.

But given the Montreal Protocol's inclusion of the idea in its latest report, we could be taking the first steps.

"We’re actually advancing the ball a bit here by having the first full chapter in this framework where every nation in the world is at the table," David Fahey, one of the co-chairs of the scientific assessment panel, told *CNBC*.

"'It depends,' is a really, really important message on this topic at this stage," he added.

Supporters of the idea of climate interventions like solar geoengineering argue that the world is accelerating towards a climate disaster and we can't afford to sit idly by.

"It’s morally wrong, in my opinion, for us not to be doing this," Iseman told *MIT Tech*, adding that it's important "to do this as quickly and safely as we can."

A graph in the Montreal Protocol shows that the global surface temperature could rise significantly with limited or no mitigation. Injecting aerosols into the stratosphere could offset this rise significantly, according to the graph.

Meanwhile, Iseman isn't dissuaded by the uncertainties and lack of scientific consensus on the effects of solar geoengineering, telling the *WaPo* that he plans to release more balloons later this month from Mexico.

He's planning to spend the next 20 years releasing "as much as I possibly can while doing it safely," he told the newspaper.

And, oddly enough, he's technically not breaking any rules, either. As a recent *Bloomberg* opinion piece points out, "there is no law or treaty to prevent a private company from tinkering with geoengineering."

6: Scientists Test System for Controlling Where Lightning Strikes Hit Using Lasers

Scientists playing God — or in this case, Zeus — have managed to divert lightning for the first-time using lasers, opening up new possibilities of protecting buildings and people from nature's destructive electric strikes.

Lightning rods have already been in use for centuries and are pretty effective overall — but they have one big drawback as well.

"Metal rods are used almost everywhere to protect from lightning, but the area they can protect is limited to a few meters or tens of meters," Aurélien Houard, a physicist at École Polytechnique in Paris who led the experiment, told The Guardian.

A laser, however, could provide much better coverage.

As detailed in their report published this week in the journal Nature Photonics, Houard and his team shot pulses out of a specialized, high power laser at thunderclouds from atop a point on the Santis mountain in Switzerland at roughly 1,000 times per second.

It was the perfect place to test out their laser — a nearby tower with a massive lightning rod regularly gets struck around one hundred times per year.

By rapidly heating the air, those laser pulses created conductive channels that served as an easier and therefore more likely path for lightning to travel down.

"It's like drilling a hole through the air with the laser," Houard explained to Nature.

In total, the researchers were able to redirect four lightning bolts, one of which they were able to clearly capture on camera (the video, unfortunately, is not available to the public).

To be clear, the researchers have only tested directing the lightning onto the nearby tower's lightning rod — further testing would be needed to demonstrate redirecting lightning onto a distant one.

Still, that doesn't make the results any less remarkable.

"The achievement is impressive given that the scientific community has been working hard along this objective for more than 20 years," opined laser physicist Stelios Tzorkzakis from the University of Crete, who was not involved in the study, in a statement to Nature.

"Using lasers instead of a lightning rod, or using lasers to trigger or steer lightning, is a fascinating idea," physicist Joseph Dwyer from the University of New Hampshire, who also was not involved in the research**,** told the *Washington Post*. "It seems like a no-brainer but it turns out to be really hard to do."

As for its usefulness, Houard doesn't think the technology can be effectively deployed anytime soon, but believes that it'll eventually be invaluable for protecting critical infrastructure like airports.

7: Dolphins Are Screaming Because of Underwater Drilling Noise, Scientists Say

Published recently in the journal *Current Biology*, a new paper out of the Dolphin Research Center in the Florida Keys studied a pair of dolphins named Delta and Reese, who the marine biologists outfitted with recording tags to determine how their communication changed in response to different loud sounds that they piped into their pool via speakers.

In the wild and in captivity, dolphins communicate with each other through a variety of sonic tricks including echolocation and those adorable clicks and whistles humans love so much. When introduced to noises akin to the kind of loud drilling done by the military, oil, and shipping industries in the experiment, the pair would lengthen their calls and make them louder to try to be heard over the noise. In short: they were shouting, or screaming, to be heard by one another — and often, they weren't successful.

Unsurprisingly, louder noises corresponded to Reese and Delta having even more difficulty communicating. At the loudest sounds, they were only successfully able to communicate 62.5 percent of the time, the study found.

"It was surprising to see how much the success rate dropped," Pernille Sørensen, a biologist and PhD candidate out of the University of Bristol in England who cowrote the *Current Biology* paper, told the *New York Times* of the experiment.

While scientists have observed dolphins in the wild seeming to change their behavior in response to humans, such as an Australian study that in 2006 linked lower rates of dolphin sightings to higher numbers of dolphin-watching tourism boats, until this study, no one had documented their response to what the researchers call "anthropogenic noise."

As Oregon State University behavioral ecologist Mauricio Cantor told the *NYT*, "it’s usually really hard to do these kinds of studies in the wild," hence the captivity study.

What's perhaps even more tearjerking about this study is that Delta and Reese were apparently thrilled to participate.

"They’ve always been the most motivated animals," Sørenson told the *NYT*. "They were really excited about doing the task."

8: Solar Powered Machine Turns CO2 and Waste Plastic into Valuable Fuel

In promising news for our humanity-burdened planet, a team of researchers at the University of Cambridge say they've built a machine that transforms both CO2 and plastic waste into sustainable fuel and other valuable materials, using only energy from the Sun to do so.

As the researchers detail in a new study published in the journal *Nature Synthesis*, their "photoelectrochemical" system is unique not only in its ability to turn Earth-destroying byproducts like CO2 and plastics into useful and sustainable materials, but also its ability to work with multiple materials at once.

"Converting waste into something useful using solar energy is a major goal of our research," Professor Erwin Reisner, a scientist at Cambridge's Yusuf Hamied Department of Chemistry and senior study author, said in a university press release. "Plastic pollution is a huge problem worldwide, and often, many of the plastics we throw into recycling bins are incinerated or end up in landfill."

"A solar-driven technology that could help to address plastic pollution and greenhouse gases at the same time," added study coauthor and fellow Cambridge chemist Subhajit Bhattacharjee, "could be a game-changer in the development of a circular economy."

As for how the machine actually works, it's complex.

The reactor, which features two compartments built separately for greenhouse gases and plastic waste, uses a light absorber called perovskite, a "promising alternative to silicon for next-generation solar cells," according to the university. A chemical catalyst — which, importantly, can be altered and tuned depending on machine's output — is embedded into the light absorber.

"What's so special about this system is the versatility and tunability — we're making fairly simple carbon-based molecules right now, but in future, we could be able to tune the system to make far more complex products, just by changing the catalyst," Bhattacharjee continued.

"Generally, CO2 conversion requires a lot of energy, but with our system, basically you just shine a light at it, and it starts converting harmful products into something useful and sustainable," added coauthor Motiar Rahaman, also a researcher at the Yusuf Hamied Department of Chemistry. "Prior to this system, we didn't have anything that could make high-value products selectively and efficiently."

Excitingly, when testing materials under normal pressures and temperatures, the photoelectrochemical system was able to turn PET plastic bottles and CO2 into several kinds of cabon-based fuels and other sought-after compounds, including synthetic gas — a key component of sustainable liquid fuels — and glycolic acid, a chemical beloved by skincare companies.

And that's just what they're able to make now. As noted in the release, over the next five years the researchers hope to figure out how to use the machine to reuse, recycle, and transform more complex particles. And eventually? They think the system could grow to power a fully solar recycling plant.

"Developing a circular economy, where we make useful things from waste instead of throwing it into landfill, is vital if we're going to meaningfully address the climate crisis and protect the natural world," said Reisner. "And powering these solutions using the sun means that we're doing it cleanly and sustainably."

9: The Us Government is Considering A Ban on Gas Stoves

"This is a hidden hazard," said agency commissioner Richard Trumka in an interview with the outlet.

"Any option is on the table," he added. "Products that can't be made safe can be banned."

But Trumka later clarified that a ban wouldn't mean feds coming to your house to tear out your grandma's gas stove.

"To be clear, CPSC isn't coming for anyone's gas stoves," he wrote in a tweet. "Regulations apply to new products."

Noxious Fumes

Still, a potential ban isn't something that's likely to fly well with many chefs, nevermind the 35 percent of homes in the country that currently use gas stoves.

But the case against them grows more compelling by the day. The latest and likely not the last nail in the coffin is a new study published last month in the *International Journal of Environmental Research* that linked gas stoves to kids developing childhood asthma.

To paint an even uglier picture, the study found that 12.7 percent of all childhood asthma cases in the country can be attributed to using gas stoves, totaling around 650,000 kids.

Gas stoves can release a number of dangerous pollutants like carbon monoxide and formaldehyde, but in particular it's nitrogen dioxide — a known lung irritant — that's singled out as causing asthma in children.

"It's like having car exhaust in a home," study coauthor Brady Seals told the Washington Post last week. "And we know that children are some of the people spending the most time at home, along with the elderly."

Predictable Pushback

The natural gas industry hasn't been taking these claims sitting down. Last week, the American Gas Association released a statement condemning the study's methodology — a common tactic — claiming that "no measurements or tests based on real-life appliance usage" were conducted, and suggesting that the health risk estimations the authors used were possibly "wrong or biased."

Meanwhile, in a statement to CNN, the Association of Home Appliance Manufacturers have upheld good ventilation rather than a blanket ban as the key

to combating indoor pollution. Take either interested party's claims with a grain of salt, of course.

As of now, no regulatory action has been proposed, the CPSC told *CNN*, and any concrete action would require a "lengthy process."

10: In Terrifying News, Big Brained T-Rex May Have Been as Smart as Primates

The tyrannosaurus rex was the apex of all apex predators in its heyday over 65 million years ago, known more in pop culture for its ferocity than its smarts. But according to a new study, we may have been underestimating how intelligent these towering tyrants were this whole time.

In fact, compared to the intelligence of their peers, the T-Rex and other theropods — three clawed, bipedal dinosaurs — may have been the "primates of their time," said neuroscientist Suzana Herculano-Houzel, author of the study published in the Journal of Comparative Neurology, in a video about her research.

According to her findings, theropods had as many neurons in their brains as monkeys do today, with the T-Rex boasting "baboon-like" numbers of up to 3 billion neurons. That's a pretty scary level of intelligence for a killing machine the size of a house.

With that many neurons, a T-Rex wouldn't have just possessed uncanny cognition. It also might have lived longer, up to 40 years, Herculano-Houzel estimates. That's enough time and smarts to potentially be a social creature with its own culture, like primates and whales, and also suggests they may have worked together, too.

The ability to use tools is even on the table — though with their infamously stubby arms, that seems less likely.

It's officially news: T. rex had baboon-like numbers of brain neurons, which means it had what it takes to build tools, solve problems, and live up to 40 years, enough to build a culture! Paper is just out in J Comp Neurol. Reality was actually MORE terrifying than the movies!

Without any theropod brains lying around — soft tissues like gray matter are rarely fossilized — determining an accurate neuron count of an extinct animal relies on the brains of its modern descendants: birds.

"If you can figure out how many neurons go into a bird brain of a certain size, and you can figure out what size was the brain of different bird-like dinosaurs," Herculano-Houzel explained, "then you can do the math and estimate how many neurons a dinosaur brain had."

That math is relatively simple. Instead, the difficulty lied in establishing that the brain size proportionality in birds also applied to dinosaurs — "which is what I just did," she declared.

But as an essential tenet to her work, Herculano-Houzel maintains that theropods must be treated as a discrete group with its own distinct traits, rather than thinking of dinosaurs as a homogeneous whole.

From that assumption, Herculano-Houzel realized that theropods in particular had a similar correlation between body mass and brain size to pre-impact birds, or basal birds. From there, she used the neuron count of modern birds like emus and ostritches and applied the same rules of scaling to figure out how many neurons theropods like the T-Rex may have had.

It's a huge revelation if it holds up, and it makes you marvel at how drastically our understanding of ancient life continues to shift.

11: New Study Shows Where You Should Hide to Survive a Nuclear Attack

In the event of a nuclear blast, let's face it: you're probably screwed. Fortunately, the good researchers at the University of Nicosia decided to simulate a nuclear bomb explosion to see how it would affect people taking shelter indoors, and while the results may be grim, their findings just might increase your odds of surviving.

For the study, published this week in the journal Physics of Fluids, the researchers focused on a 750 kiloton nuclear warhead detonated almost two miles above ground, delivered by an intercontinental ballistic missile.

Anyone caught in the over half a mile in radius fireball wouldn't stand a chance, dying instantly. Not much to look into there, but it's the ensuing shockwave that extends beyond the initial blast where things get interesting. It's called the moderate damage zone (MDZ), and here your odds are better, but not by a whole lot.

In just ten seconds, a pressurized shockwave would extend nearly 3 miles in radius, bringing with it roaring winds that, together, would topple less resilient structures and likely kill anyone unlucky enough to be caught outside. On the other hand, concrete structures and otherwise sturdy structures might take a few licks but would mostly remain standing.

Logically, your odds of survival would be better inside a sturdy building, but it's not as straightforward as that.

"Before our study, the danger to people inside a concrete-reinforced building that withstands the blast wave was unclear," explained study coauthor Dimitris Drikakis in a press release. "Our study shows that high airspeeds remain a considerable hazard and can still result in severe injuries or even fatalities."

Those vicious winds will invade through windows and doors and become even stronger as they storm through corridors and narrow spaces, and likely so suddenly that you couldn't react. In a worst case scenario, those wind speeds can power up to over 400 miles per hour in the first ten seconds. If that or deadly debris doesn't kill you, the winds could still throw you around helplessly if you don't get to ground, turning your shelter into a particularly cruel bouncy castle.

However, those are the absolute worst case conditions, and luckily, there are some spots where you could avoid the brunt of the winds. And no, it's not the fridge.

"The most dangerous critical indoor locations to avoid are the windows, the corridors, and the doors," said fellow co-author Ioannis Kokkinakis.

"People should stay away from these locations and immediately take shelter," he added. "Even in the front room facing the explosion, one can be safe from the high airspeeds if positioned at the corners of the wall facing the blast."

Of course, you would still have to deal with the radioactive fallout, infernal fires sweeping the landscape, and near-total breakdown of social services. But hey, it's a starting point.

D - School of Governance and Society

1: Experts Worried Elderly Billionaires Will Become Immortal, Compounding Wealth Forever

Let's be clear: modern science has done a lot of incredible things for human health. We live way longer than we used to, and quality of life is remaining far better, for far longer, than at any other point in history.

But there are a lot of wealthy people out there who don't just want to live longer. They want to live forever, and they're using their deep pockets to try to make it happen. In fact, *Wired* just declared that anti-aging research in 2023 could "kickstart the greatest revolution in medicine since the discovery of antibiotics."

Could all that hype fall short? Sure, and it likely will. But it's *also* possible that the quest for immortality could mark a grim new inflection point in the history of wealth.

That's not just because it might mean that humanity will simply have to exist with the glare from an immortal Jeff Bezos' glistening scalp for eternity, but because such technology might mean that people like Bezos, whose money equals a *whole* lot of power, would be able to continue compounding that wealth and power for, well, forever.

"Suppose, for example, we had a kind of vaccine for the pandemic of age," Christopher Wareham, a bioethicist at Utrecht University who studies the ethics of aging, told *The Financial Times*. "This is going to potentially exacerbate all the kinds of existing inequalities that we have... The longer you're around, the more your wealth compounds, and the wealthier you are, the more political influence you have."

It's a bone-chilling hypothesis, to say the least. Time, of course, is the central reason why anything really changes, politics included. Old leaders and belief systems die, new citizens with fresh ideas are born; in Wareham's dystopian postulation, dictators and autocrats, as well as their donors, would additionally flock to the still-mythic technological fountain of youth.

And seeing as how neither wealth nor power, political or otherwise, are historically something that folks are too keen to share, it's not exactly outlandish to assume that the already-rich makers of such a miracle drug or device might employ some hefty gatekeeping efforts. (Fascinatingly, billionaire SpaceX founder and hopeful Mars colonizer Elon Musk is very much opposed to immortality tech on grounds that leaders should definitely die at some point.)

That being said, some in the field are grappling with these issues, at least in principle. Mehmood Khan, for example, chief executive of longevity nonprofit Hevolution Foundation, told the *FT* that his organization is only funding products that can be "democratized."

"If this is going to be a gazillion dollars' worth of treatment for a handful of people," he told the outlet, "it is of no interest."

Elsewhere, the Bezos-funded Altos Labs, founded with the intention of materializing "cellular rejuvenation programming" to "reverse" disease and injury, says that it's committed to helping as many people as possible.

But of course, as anyone of these organizations has yet to crack the code on immortality, or even an added twenty years to the human lifespan, these are just promises. But any breakthrough would be a financial jackpot in its own rite, and across the board, when that much money — and again, that much power — are involved, promises are easily broken.

Anyway. See you in MetaHeaven, where we sacrifice our data to our meat-smoking Lord Zucko in exchange for eternal algorithmic life. Our only holiday is Prime Day, established globally after The Great Merge, and Peter Thiel may or may not be somewhere on post-apocolypse Earth wearing a cape, avoiding garlic, and sitting on a massive pile of gold coins in a bunker with Bezos and the Kardashians. Catch you on the other side of mortality!

2: Man Accuses Cops of Throwing Him in Jail Based on False Facial Recognition Match

In November, local cops threw Randal Reid, a 28-year-old black man living in Georgia, in jail for nearly a week for allegedly stealing expensive purses from a boutique store all the way in a New Orleans suburb in Louisiana. The basis for the arrest? A facial recognition tool that falsely matched him as the suspect, the New Orleans Advocate reports.

"They told me I had a warrant out of Jefferson Parish," Reid told the outlet. "I said, 'What is Jefferson Parish?' I have never been to Louisiana a day in my life."

His lawyer, Tommy Calogero, says that a detective from the Jefferson Parrish's Sheriff's Office (JPSO) "took the algorithm at face value" to secure an arrest warrant. After being arrested the day after Thanksgiving and an almost week-long stint in jail, Reid was eventually set free, with the detectives "tacitly" admitting their error, according to Calogero.

Calogero says it should've been clear from the start that the facial recognition match was bogus. By his estimates, the suspect in the surveillance footage easily looks 40 pounds heavier than Reid, with other clear physical differences.

"There are 300 million people in this country," he told the paper. "All of us have someone who appears identical to us."

Ominous Overreach

Although proponents of facial recognition software maintain that it's merely a tool that will help identify potential suspects rather than being the sole evidence used in an arrest, Reid's case makes the tech's potential for abuse abundantly clear.

"They will always say this is for an investigative lead," Chris Kaiser, advocacy director of the American Civil Liberties Union in Louisiana, told the Advocate. "But there really isn't any protection behind that."

Unsurprisingly, the JPSO has denied a formal request to release an arrest warrant and documents pertinent to its use of facial recognition, according to the *Advocate*, ostensibly due to the ongoing nature of the investigation.

And Reid won't be the last, Evan Selinger of the Surveillance Technology Oversight Project told Gizmodo: "When there's a political need to be seen as committed to decisive action, high-tech options — even deeply flawed and highly controversial ones — can have good short-term optics."

In addition, Calogero's arrest highlights the common racism existing in AI tools, especially facial recognition ones.

But those troubling caveats don't seem to be worrying lawmakers across the country, including in New Orleans, where its City Council furtively reversed its ban on facial recognition last summer.

3: It's Still Easy to Impersonate a Senator on Twitter After Elon Musk Promised Verification Was Fixed

Twitter CEO Elon Musk promised last month that the site's revamped $8/month verification system would no longer allow troublemakers to impersonate famous people and companies.

Turns out he was wrong yet again. *The Washington Post* columnist Geoffrey Fowler was easily able to impersonate US senator Edward Markey with a verified Twitter account with the username @SenatorEdMarkey — a stunt he also pulled during the first disastrous launch of the feature.

In other words, Twitter is doing very little to despite Musk's promises of manually authenticating "all" blue checkmark accounts back in November.

Needless to say, facilitating the impersonation of a politician could allow for the spread of misinformation and sow chaos online.

"Under Musk’s leadership, Twitter users face a greater risk of seeing something fake and thinking it is real," Fowler argues in his column.

Impersonal Touch

Twitter has clearly struggled to come up with an alternative to the platform's legacy verification system. Musk has attempted to roll out several iterations over the last two months, none of which seem quite watertight.

This time around, all it took for Fowler was to create a new Twitter account on his iPhone and pay $7.99 for his blue checkmark using a credit card. He dodged the meek hurdles set up by Twitter — accounts need to be 90 days old and linked to a phone number — by renaming an old account.

At no point was Fowler asked for a piece of identification, something that is commonplace for other online services, such as Facebook or Airbnb.

In short, it's a troubling failure for a platform that was once seen as a place you can trust — at least to a degree — before Musk took over late last year.

"It’s an absolute joke that Elon Musk, who prides himself on being a tech entrepreneur, can’t implement a functioning verification regime — except users aren’t laughing," the real Markey told Fowler.

4: Twitter Employees Beg Elon Musk for Toilet Paper as Horrid Stench Seeps from Bathroom

Look, there are definitely some valid criticisms of bean bag chair Silicon Valley work culture. And while not everybody out there is keen on sleeping on factory floors, we're all motivated by different things. Still, we're pretty sure that most everyone can agree that, at the very least, toilet paper — and clean, functioning bathrooms — are a baseline office expectation.

But apparently, those remaining at Twitter's New York HQ are privy to no such luxury.

Speaking to *Insider*, sources familiar with the matter say that several engineers at the company's Chelsea office have taken to Slack and email to beg Chief Twit Elon Musk — who, despite firing Twitter's janitorial staff as they were allegedly told they'd be replaced with robots, has required most company engineers to work in-office five days a week — for toilet paper, among additional complaints that a foul stench wrought by days-long clogged toilets has begun to pervade the entire workspace.

As of Thursday, the sources say, no one had received a response. Now, the New York engineers will likely be forced to implement a BYOTP policy, just as Twitter staffers at the San Francisco HQ were briefly forced to do. Sounds... functional.

Productivity Booster

Musk's failure to renegotiate contracts with Twitter's nationwide janitorial teams fits into what the CEO has painted as a wider effort to cut costs, an effort characterized by major workforce slashes and straight up just not paying bills.

To that point, the dismal bathroom situation is just one of the New York workers' problems. Per *Insider's* sources, Musk's job cuts have rendered the company's internal IT team pretty much nonexistent, leaving still-standing staffers with little to no recourse for computer-related issues ranging from "broken chargers" to "accidentally being locked out of internal systems required to do their jobs."

And on top of all that, one source told *Insider* that they're having to undergo performance reviews "basically all the time," with workers' productivity continuing to be the most important metric. You know, because horrifying bathroom odors and lack of toilet paper, coupled with being locked out of needed computer systems and, well, *everything else*, is conducive to healthy productivity.

To be fair, Twitter has long faced a revenue problem, and it was always going to be a challenge for Musk as CEO. Even so, withholding toilet paper just doesn't seem like a solid fix.

5: Startup Shows Off Pillow That Detects Snoring and Automatically Adjusts Your Head

Snorers, rejoice! A startup has developed a pillow that they say detects snoring while a user is sleeping, and then physically moving their head in a bid to stop the ghastly noise, hopefully allowing snorers' partners to get a good night sleep without the need for a mouthguard or headgear-laden machines.

The device, dubbed the Motion Pillow, seems pretty cool. According to the company's absolutely wild ride of a website, it first uses machine learning to detect the sound of the users' snoring, perfecting its profile over time.

When it detects snoring during the night, the pillow jumps into action, inflating to adjust the position of the user's head. If the snoring subsides, the pillow deflates. Everyone, romantic partners especially, are happy.

"With Motion Pillow," reads the startup's site, which additionally claims that 93.7 percent of users experienced reduced snoring in clinical trials, "metal music becomes classical music."

High Tech Dad

While reviews online are scarce, we did find one on a site called *High Tech Dad* that gave a glowing assessment of the device.

"From testing with my wife for about a week, I can say her snoring was not only reduced in volume but also in frequency," le tech daddy in question wrote in praise of Motion Pillow. "This innovative device detects snoring and then magically inflates airbags inside the memory foam pillow to gently raise the snorer's head slightly to prevent or reduce snoring."

Magical-sounding indeed! And while our allegedly high tech father figure is aware of the product's above-average-for-a-pillow price tag, he seems to think it's worth it.

"While is it a bit pricy," the techno daddio offered, "being able to get a better sleep, either as the snorer or the person next to them is worth the price."

In any case, we've yet to try it, but it was a 2023 Consumer Technology Association Innovation Awards Honoree. Plus, snoring is a legitimate issue for a lot of folks — couples especially — out there. If you've got roughly 400 extra beans in the bank and either you or your partner struggle with, as Motion Pillow would say, "nose metal," we wouldn't blame you for giving it a whirl.

6: Elon Musk Now Denies That His Family's Emerald Mine Existed, In Spite of Previously Bragging About It

Elon Musk is denying claims that his family owned an emerald mine, even though he was bragging about it less than a decade ago.

"The fake emerald mine thing is so annoying (sigh)," Musk tweeted over the weekend. "Like where exactly is this thing anyway!?"

As many pointed out, the mine was in Zambia — at least, according to Musk himself back in 2014.

"Musk and his family seem particularly sensitive about shaping the narrative about their history lately, especially around the emerald mine," tech critic Paris Marx tweeted in response. "They act like they've never heard of it before, even though he bragged to *Forbes* about it in 2014."

Included in the post is a screenshot a 2014 *Forbes* interview conducted by freelancer Jim Clash in which Musk, then more broadly considered a wunderkind, shared an off-handed anecdote about his now-estranged father Errol Musk's alleged mine.

"This is going to sound slightly crazy," the multi-hyphenate billionaire is quoted as saying, "but my father also had a share in an Emerald mine in Zambia."

Curiously, the interview in question is no longer live on *Forbes*' website, though it is backed up by the Internet Archive. There's no note explaining why it was taken down, and the original link leads to a 404 error page — though *Futurism* has reached out to *Forbes*, the freelancer, and Musk himself for further details.

The open question surrounding the alleged existence of the elder Musk's Zambian emerald mine is made all the murkier by the way it's spun out of control online, with dubious takes claiming the mine existed in the neighboring country of South Africa (where the Musks are from) or that the money gained from those "blood" gems acted as seed capital for the younger Musk's many business ventures, or at least paid off his student loan debt.

As the conspiracy-debunking site *Snopes* reported back in November, many of those claims don't hold up. But reporting over the years does seem to corroborate that the mine existed, contrary to Musk's latest claims.

Among those many mine mentions is the infamous anecdote from another *Insider* piece in 2018 about Elon and his brother Kimbal pocketing some of their father's emeralds before walking around New York City with the

gems in their pockets, where they sold them to Tiffany & Co. for a couple thousand dollars.

In response to *Snopes*, the *Forbes* writer Clash said that he was unsure why the magazine had taken the interview down. That response, like everything about this story, just serves to further complicate the whole debacle, though if we were to wager a guess as to why Musk now claims his family never owned any mines, it would be similar to Marx's: that he thought it was cool to brag about it back in 2014, but it's significantly less politically expedient to do so now.

"I did interview Elon, he said what he said, and I don’t know why they’d take it down," Clash told us in an interview.

As with other outlandish Muskian claims, there is, of course, another possibility: that he (or his father) completely or partially made it up for clout, and Elon is now backtracking because the concept of a white South African co-owning an emerald mine has the stench of apartheid regardless of the specifics.

E – Office of Research Innovation and Commercialization (ORIC)

1: Events Organized and Facilitated by ORIC

1.1 Training Program on Web 3.0 and Metaverse on Sunday 01 January, 2023, at University of Management and Technology (UMT).

Office of Research Innovation and Commercialization (ORIC), University of Management and Technology (UMT), in collaboration with The Presidential Initiative for Artificial Intelligence and Computing (PIAIC) arranged a training Program on Web 3.0 and Metaverse at UMT on Sunday 01 January, 2023, at University of Management and Technology (UMT).

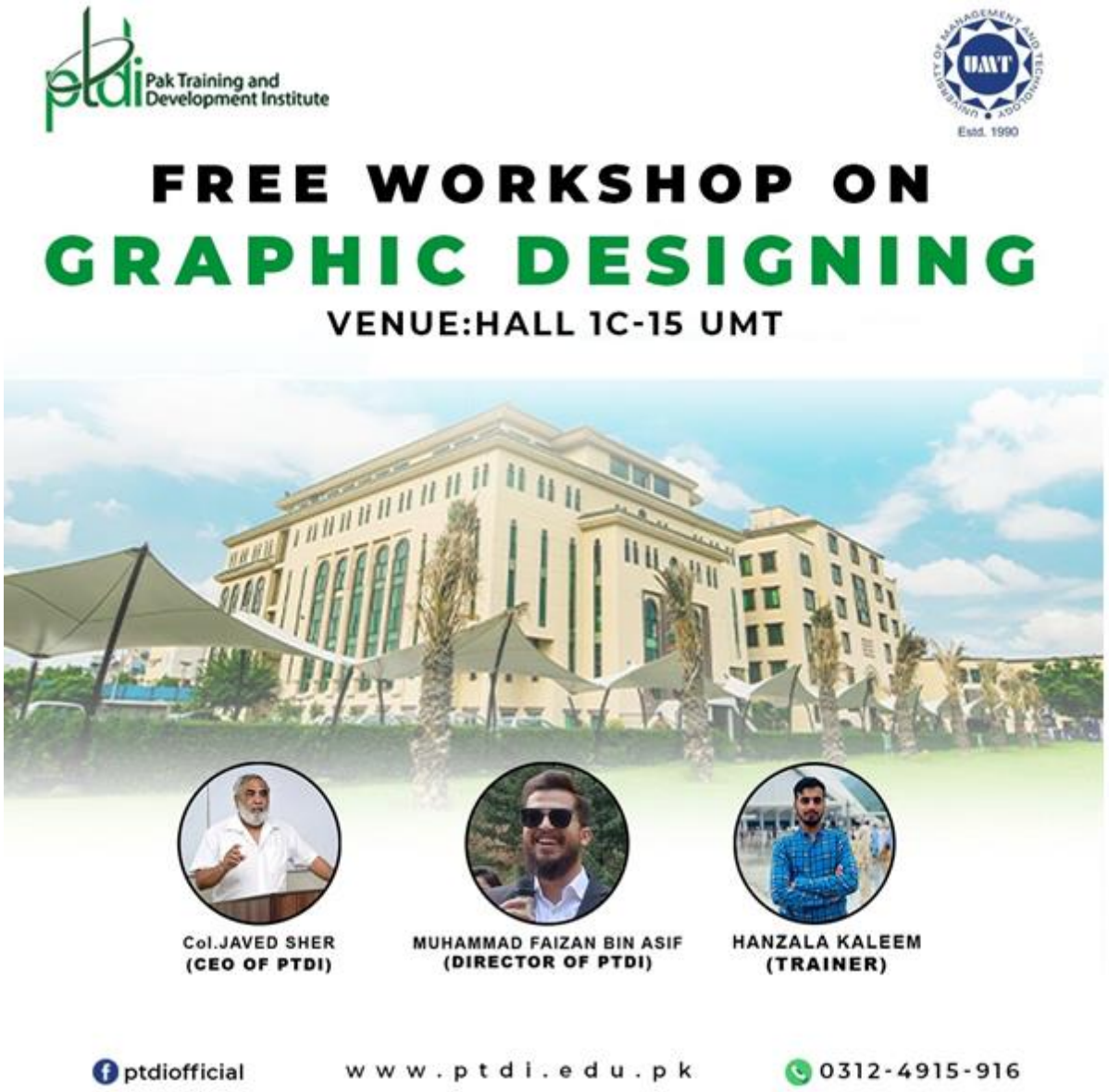

ICORE
3rd International Conference on
Research in Education and Lead
29- 30 December 2022

1.2 Training Program on Web 3.0 and Metaverse on Sunday 08 January, 2023, at University of Management and Technology (UMT).

Office of Research Innovation and Commercialization (ORIC), University of Management and Technology (UMT), in collaboration with The Presidential Initiative for Artificial Intelligence and Computing (PIAIC) arranged a training Program on Web 3.0 and Metaverse at UMT on Sunday 08 January, 2023, at University of Management and Technology (UMT).

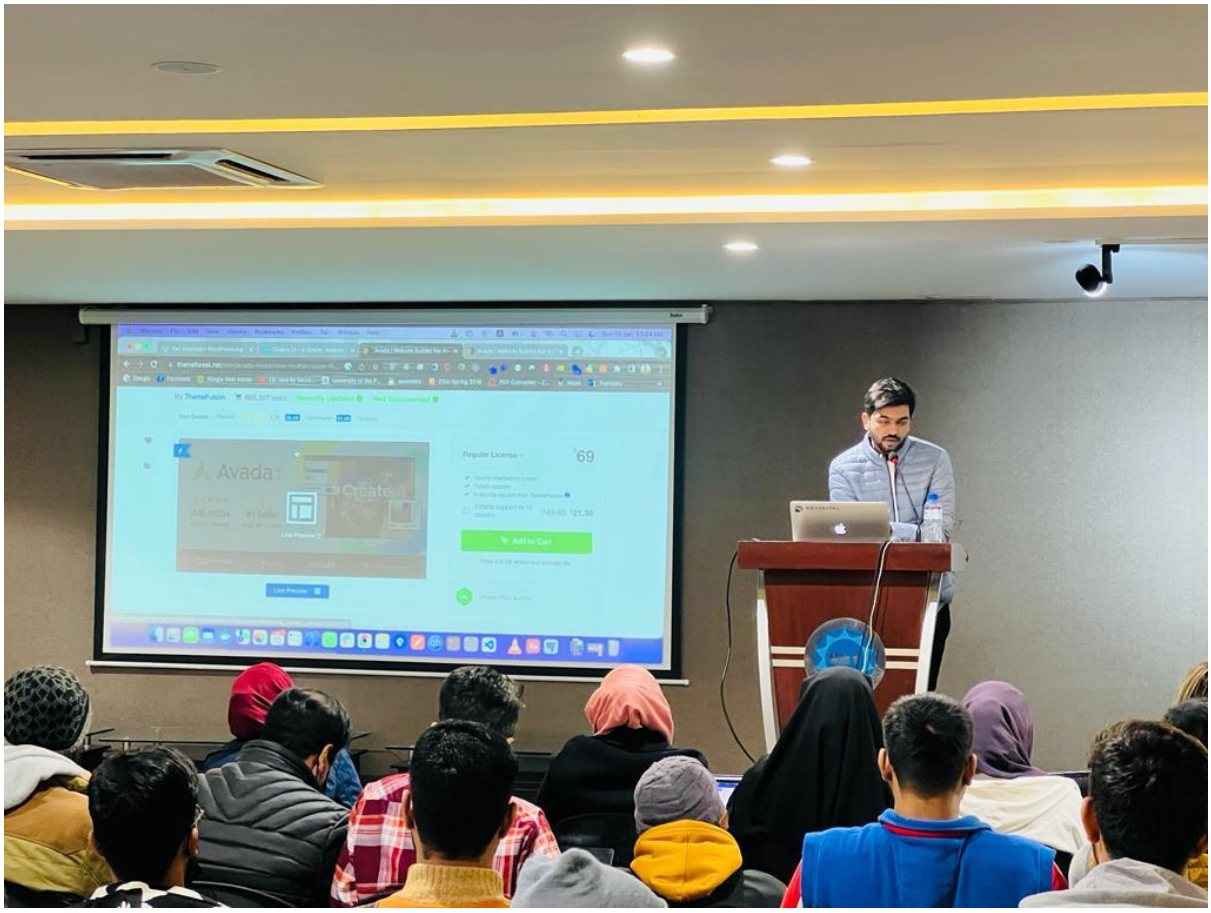
1.3 ORIC Organized a free Series of Workshops on "Graphic Designing"

Office of Research Innovation and Commercialization (ORIC), in collaboration with the Pakistan Training Development Institute (PTDI), organized a free Workshops on "Graphic Designing" on Thursday, January 12, 2023 from 05:30 PM to 06:30 PM. (Guest Speaker: Hanzala Kaleem -Trainer).



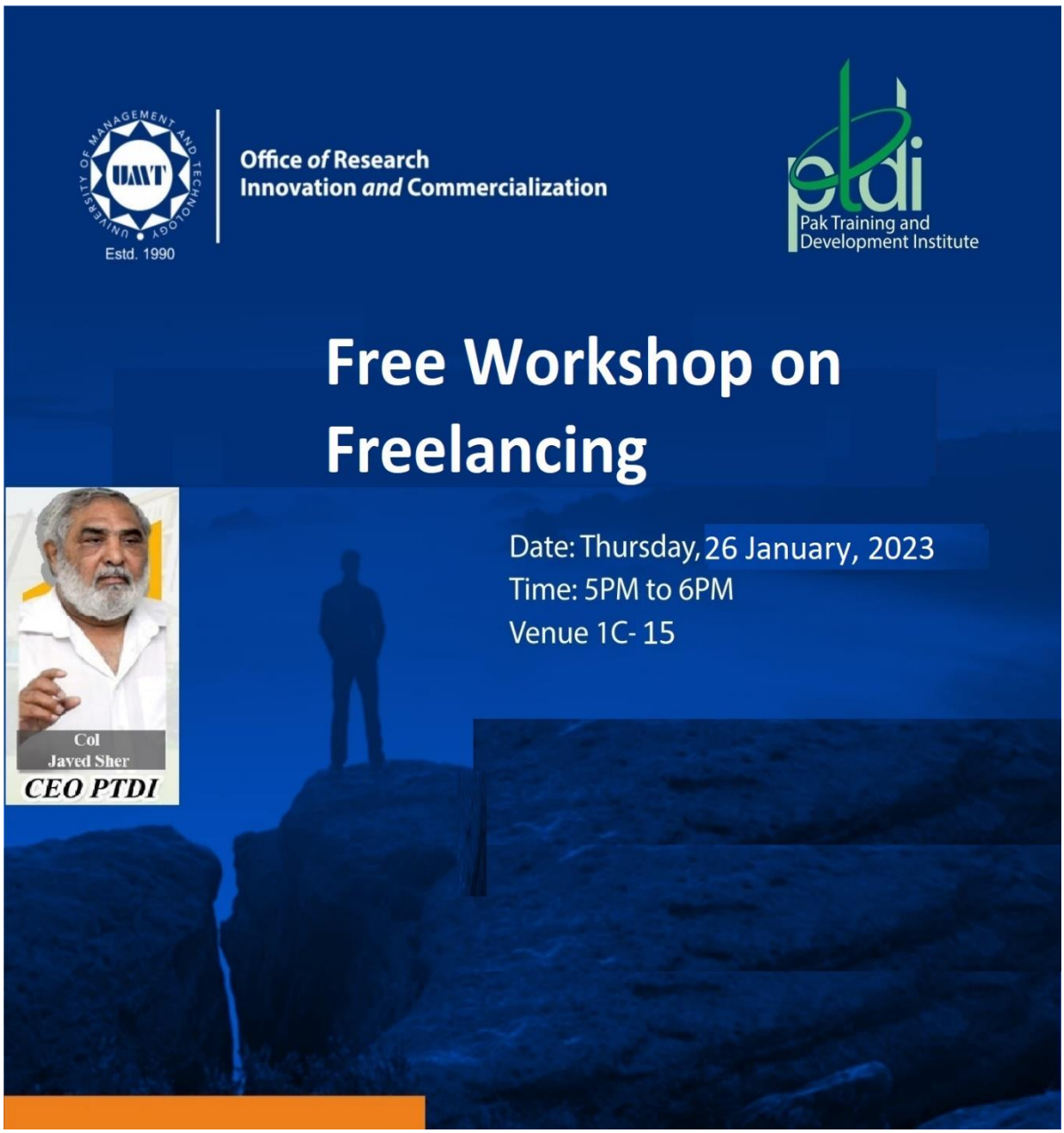
1.4 Training Program on Web 3.0 and Metaverse on Sunday 15 January, 2023, at University of Management and Technology (UMT).

Office of Research Innovation and Commercialization (ORIC), University of Management and Technology (UMT), in collaboration with The Presidential Initiative for Artificial Intelligence and Computing (PIAIC) arranged a training Program on Web 3.0 and Metaverse at UMT on Sunday 15 January, 2023, at University of Management and Technology (UMT).


Avada
Create
Regular License
69
Add to Cart
Live Preview

1.5 ORIC Organized a free Workshops on "Freelancing"

Office of Research Innovation and Commercialization (ORIC), in collaboration with the Pakistan Training Development Institute (PTDI), organized a free Workshops on "Freelancing" on Thursday, January 26, 2023 from 05:00 PM to 06:00 PM. (Guest Speaker: Miss Rida Naqvi -Trainer).



1.6 Organized the 1st Triple Helix Round Table Session on Punjab Economics

The 1st Triple Helix Round Table Session on Punjab Economics was held on January 25, 2023, in the DG Board Room, 5th Floor, Admin Building, UMT. The meeting started with a recitation of the Holy Quran. The Respectable Prof. Abid H K Shirwani (DG/Co-founder/Head ORIC- UMT) headed the meeting with the Verses of the Holy Quran in the name of Almighty Allah.


1st
Triple Helix
Round Table Session
on Punjab Economy
Office of Research
Innovation and
Commercialization
HSM
TRIPLEHELIX
UNIVERSITY INDUSTRY GOVERNMENT association


acer


Interventions – short , medium and long term


1st

2: Organized the meeting with Focal Person of ORIC

Organized the meeting with Focal Person of ORIC on Wednesday, January 06, 2023, at 10:00 AM in DG Board Room, 5th Floor, Admin Building, UMT.

3: Organized the meeting Regarding International Research Collaboration

The Meeting Regarding International Research Collaboration was held on January 19, 2023, in the DG Board Room, 5th Floor, Admin Building, UMT. The meeting started with a recitation of the Holy Quran. The Respectable Prof. Abid H K Shirwani (DG/Co-founder/Head ORIC- UMT) headed the meeting with the Verses of the Holy Quran in the name of Almighty Allah.