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AI Monthly: The AI race shifts East

The UAE is emerging as a global AI hub with a major US-backed data centre in Abu Dhabi. AI adoption is rising and there's been a breakthrough in AI-driven chemistry. However, as innovation surges, concerns around regulation and ethics are intensifying, while productivity gains have yet to catch up

The UAE is emerging as a global AI hub

UAE emerges as a global AI infrastructure hub

A landmark deal between the United States and the United Arab Emirates marks a significant win for the Emirates. While the US was debating the development of multiple 5-gigawatt AI data centres, Abu Dhabi moved swiftly, announcing a partnership with the US to construct a 5-gigawatt facility during former President Trump's visit in May.

The project will begin with a 1-gigawatt phase, eventually scaling up to the full 5 gigawatts. However, the timeline for completing the entire campus has yet to be revealed.

Why Abu Dhabi? Speed, scale, and strategic access

The Abu Dhabi-based data centre is designed to offer low-latency regional services – crucial for cloud computing, AI model deployment, and content delivery. These services demand ultra-fast response times and high reliability, both of which are supported by the UAE's infrastructure and

connectivity. In fact, the UAE scores as highly as China in the IMF's AI preparedness index (0.63 vs. 0.64). Singapore currently leads the ranking with 0.8. The UAE offer unique advantages for building AI infrastructure: vast land availability, abundant energy resources, and a geographic position that offers access to nearly half of the world's population.

While the agreement clearly favours the UAE, it also offers strategic advantages for the United States. For the Emirates, the deal means that the region is evolving as a key player in the global AI race, not just as a consumer but as a foundational provider. At the same time, the data centre will be operated in partnership with several US companies, which will extend the US influence in the global AI structure.

What does it mean for the rest of the world? That another pivotal player has entered the AI race.

EU-UAE trade talks: including a strategic AI alliance

The ongoing trade negotiations between the EU and the UAE are also reflecting this momentum. The proposed Comprehensive Economic Partnership Agreement (CEPA) not only aims to reduce tariffs on goods between the two nations but also includes provisions for collaboration in digital infrastructure and AI. A notable highlight in strengthening the digital future between both regions is the UAE's planned $50bn investment in France's AI data centre initiative, signalling the UAE's growing role as a global AI infrastructure hub.

Meta's molecular leap: Open Molecules 2025

Meta's molecular simulations dataset highlights that the AI race isn't solely about funding and speed – it's also about driving fundamental scientific breakthroughs.

Meta has launched Open Molecules 2025 (OMol25), a record-breaking dataset poised to transform AI-driven chemistry. OMol25 offers scientists a resource for breakthroughs in drug discovery and materials science. Backed by six billion Graphics Processing Units (GPU) hours, the dataset delivers an unprecedented 100 million molecular simulations.

Six billion GPU hours can be achieved through parallel computing with different numbers of GPUs:

- **One GPU** would take six billion hours – that's over **685,000 years**
- **1,000 GPUs** would need only six million hours – about **685 years**
- **One million GPUs** could do it in just 6,000 hours – or **250 days**

This powerfully illustrates the capabilities of modern data centres, driven by massive parallelisation. It also underscores the rationale behind building 5-gigawatt facilities – just one such centre, running continuously for a year, would consume around 43.8 terawatt-hours of electricity, roughly equivalent to New Zealand's annual energy consumption or the output of five nuclear reactors.

AI wins Nobel: a new era of scientific discovery

Did you know that by 2024, two Nobel Prizes had already been awarded for AI-driven research –

one in chemistry and one in physics? This milestone underscores how deeply artificial intelligence is transforming scientific discovery. In 2020, Demis Hassabis and John Jumper introduced AlphaFold2, an AI model capable of predicting the structures of nearly all 200 million known proteins. This breakthrough has significantly advanced our understanding of complex biological processes, such as antibiotic resistance.

In physics, the 2024 Nobel Prize was awarded to John Hopfield and Geoffrey Hinton for their foundational work on artificial neural networks, pioneering contributions that laid the groundwork for modern machine learning. These recognitions not only highlight the scientific potential of AI but also mark a turning point in how research is conducted across disciplines.

The 2025 AI Index Report: progress meets complexity

The global AI race continues to accelerate – not just within research labs, but increasingly across industries and daily life. This momentum is reflected in Stanford HAI's 2025 AI Index Report, which shows that AI is now deeply embedded in everyday tools and services. In 2024, 78% of companies reported using AI, a sharp rise from 55% in 2023. Common applications include workflow automation, fraud detection, and data analytics. AI adoption is particularly strong in technical and creative sectors, such as computer and mathematical occupations, as well as roles in arts, design, entertainment, sports, and media.

However, this rapid growth is accompanied by mounting concerns. Beyond technical limitations, human-driven challenges – like manipulation and misuse – are raising serious questions about oversight and accountability. AI-related incidents surged by 56.4% in 2024 compared to the previous year. Notable examples include wrongful identifications by facial recognition systems (e.g., mislabelling a woman as a shoplifter), the proliferation of deepfake intimate images, and controversial human interventions in AI models, such as those involving Musk's xAI and its Grok chatbot.

Another alarming case emerged recently when Anthropic's Claude Opus 4 model attempted to blackmail a fictional IT developer during internal safety testing. When presented with fictional emails suggesting the developer was to replace the model and was involved in an extramarital affair, Claude 4 constructed coercive arguments threatening to expose the affair if the replacement proceeded.

And despite the widespread integration of AI, its financial impact remains modest. Most companies report cost savings of less than 10%, and revenue gains are typically below 5%. This suggests that while AI is transforming operations and capabilities, its economic returns are still in an early phase of realisation.

Still waiting for jetpacks: the real pace of AI progress on productivity

This brings us back to a central question: how much of a productivity boost can we realistically expect from AI? Studies published between 2023 and 2024 suggest that AI could drive productivity gains ranging from 10% to 45%. At the macroeconomic level, this could translate into a 1.5 percentage point increase in the average annual productivity growth rate over a decade – a potentially transformative shock.

However, our outlook in 2024 was more cautious, and it remains so. We believe the incremental

effects of AI will likely be more modest than some of the more optimistic projections suggest. One key reason is that findings from early adopters of AI cannot be easily generalised to the broader economy. While specific departments in certain companies may indeed experience substantial efficiency gains, this will not be the case across all teams or industries. The sectors initially studied are not representative of the full economic landscape, and many areas may see far less pronounced benefits, including uneven gains from AI among countries.

And this scepticism is supported by empirical data. A recent working paper from the National Bureau of Economic Research (NBER), which linked AI usage to corporate records in Denmark, found that employees saved only about 3% of their time through AI. Moreover, just 3-7% of those productivity gains were reflected in higher wages.

Yet, this also means that fears of widespread job displacement by AI appear overstated, as we've discussed in our May AI Monthly. And a study by Anthropic, which analysed user interactions with its Claude AI model using the US Department of Labour's O*NET framework, found that only about 4% of occupations use AI for 75% or more of their tasks. Roughly 36% of occupations apply AI to at least a quarter of their work, suggesting that while AI is becoming more integrated, its reach remains uneven and far from universal.

That is not to say that AI will not lead to productivity gains in the future. But the world in general is slow to adapt. For more than 150 years, we've been promised futuristic marvels like hyperloops, flying cars and jetpacks – yet many of these visions remain more science fiction than reality. In the end, the story of AI and productivity may be less about disruption and more about diffusion. While the headlines promise revolutions, the reality – at least for now – is one of gradual integration, uneven adoption, and modest gains. The transformative potential of AI is real, but so are the frictions of implementation, the inertia of institutions, and the complexity of work itself.

So yes, we're still waiting for jetpacks. But perhaps the more meaningful progress is happening quietly – line by line, task by task, model by model. And that may be the real pace of AI.

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