



Alibaba Unveils Forecast of Top 10 Leading Tech Trends

Hangzhou, China, January 10, 2022 – Alibaba DAMO Academy (“DAMO”), the global research initiative by Alibaba Group, provides its [forecast of the leading trends](#) that would shape the tech industry in the year ahead.

By analyzing millions of public papers and patent filings over the past three years and conducting interviews with near 100 scientists, DAMO provides the top 10 technology trends for the next two to five years that we are expected to witness accelerated breakthroughs and make impacts across sectors in the economy and the society at large.

“Over the past century, the evolution of digital technologies has accelerated technological progress and industrial development. The boundary of technologies is extended from the physical world to mixed reality, while more and more cutting-edge technologies find their way to industrial applications,” said **Jeff Zhang, Head of Alibaba DAMO Academy**.

“Digital technology plays an important role in powering a green and sustainable future, whether it is applied in industries such as green data centers and energy-efficient manufacturing, or in day-to-day activities like paperless office. With technology, we will create a better future.”

In the next two years, we expect to see a surge of applications running on top of the new computing system:

#1 Cloud-Network-Device Convergence: The rapid development of new network technologies will fuel the evolution of cloud computing towards a new computing system of cloud-network-device convergence.

In the next three years, we expect to see AI broadly applied in the research process of applied science, the widespread use of silicon photonic chips in large-scale data centers, AI paving the way for integration of renewable energy sources into the power grid, people-centric precision medicine becoming a major trend, groundbreaking improvements in the performance and interpretability of privacy-preserving computation, as well as a new generation of XR glasses:

#2 AI for Science: AI will be broadly applied in the research process of applied science and be used as a production tool in some basic sciences.

#3 Silicon Photonic Chips: A widespread use of silicon photonic chips in high-speed data transmission in large-scale data centers.

#4 AI for Renewable Energy: AI to pave the way for integration of renewable energy sources into the power grid and contribute to the safe, efficient, and reliable operation of the power grid.

#5 High-precision Medicine: People-centric precision medicine become a major trend that will span multiple fields of healthcare, including disease prevention, diagnosis, and treatment.

#6 Privacy-preserving Computation: Groundbreaking improvements in the performance and interpretability of privacy-preserving computation, and witness the emergence of data trust entities that provide data sharing services based on the technology.

#7 Extended Reality (XR): A new generation of XR glasses that have an indistinguishable look and feel from ordinary glasses entering the market and serving as a key entry point to the next generation of Internet.

In the next five years, we expect to see perceptive soft robotics replacing conventional robots in the manufacturing industry, and satellites and terrestrial systems working as computing nodes providing ubiquitous connectivity:

#8 Perceptive Soft Robotics: Perceptive soft robotics will replace conventional robots in the manufacturing industry and pave the way for wider adoption of service robots in our daily life.

#9 Satellite-terrestrial Integrated Computing: Satellites and terrestrial systems will work as computing nodes to constitute an integrated network system providing ubiquitous connectivity.

And beyond, we expect to see the future AI shifting to the co-evolution of large- and small-scale models via clouds, edges, and devices:

#10 Co-evolution of Large- and Small-scale AI Models: The future AI is shifting from the race on the scalability of foundation models to the co-evolution of large- and small-scale models via clouds, edges, and devices, which is more useful in practice.

For more detailed information, please visit the full report here:

<https://damo.alibaba.com/techtrends/2022?lang=en>

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About Alibaba DAMO Academy

Founded on October 11, 2017, Alibaba DAMO Academy is dedicated to exploring the unknown through scientific and technological research and innovation. The driving force behind the Academy is the pursuit of the betterment of humanity.

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