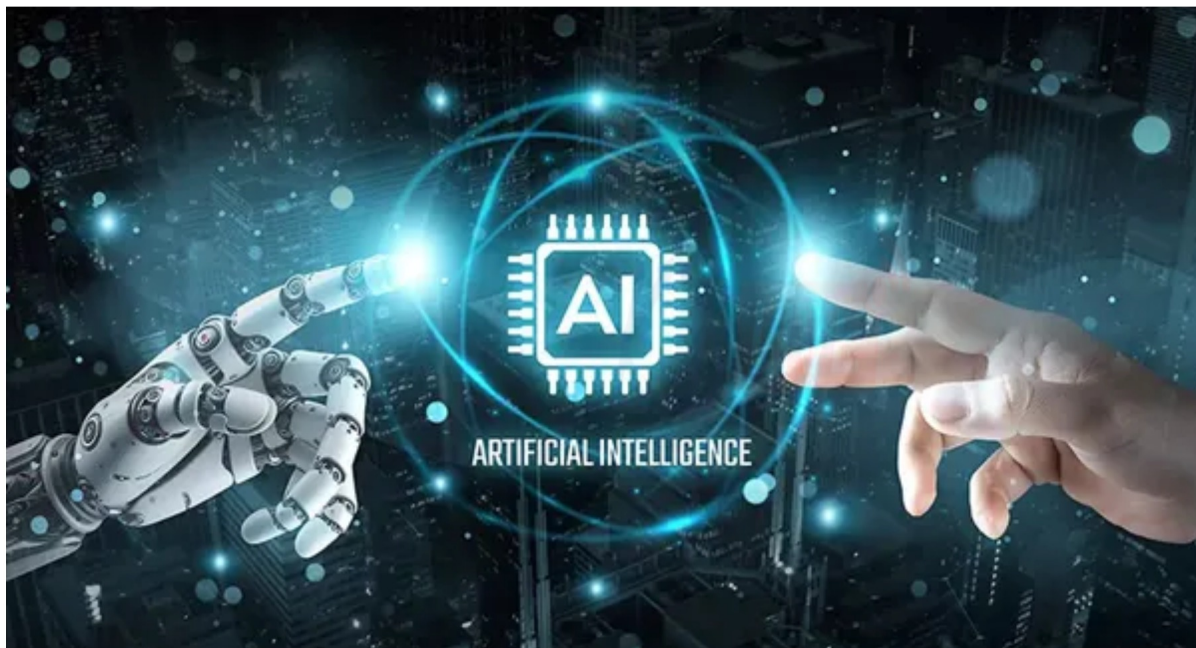




Generative AI Patent Data: A Global Perspective

In the global race to harness the potential of Generative AI (GenAI), India has emerged as a significant player. According to a recent report by the World Intellectual Property Organisation (WIPO), India ranks fifth globally in the number of GenAI patents filed from 2014 to 2023. Despite being behind China, the United States, the Republic of Korea, and Japan, India's growth trajectory in this sector is noteworthy.



[Source: The Hindu BusinessLine]

Leading Countries in GenAI Innovations

China leads the global rankings with a staggering 38,210 GenAI patents, followed by the United States with 6,276 patents, the Republic of Korea with 4,155 patents, and Japan with 3,409 patents. India, with 1,350 patents, has surpassed the UK (714 patents) and Germany (708 patents), reflecting its growing influence in the GenAI space.

India's GenAI Patent Growth: A Detailed Examination

1. Notable Indian GenAI Patents



India's Position in the Global GenAI Landscape

Among the significant patents emerging from India, notable mentions include a retail AI assistant solution patented by RN Chidakashi Technologies (Miko Robotics) and a GenAI tool for contract lifecycle management developed by Tata Consultancy Services. These inventions highlight India's innovative capabilities and its potential to contribute to the global GenAI landscape.

2. High Growth Rate in Patent Publications

India recorded the highest annual growth rate in GenAI patent publications at an average rate of 56%. This remarkable growth, although on a smaller base, signifies India's accelerating pace in GenAI innovations. In contrast, China, despite having a higher base, clocks a growth rate of 50%.

Factors Driving GenAI Patent Activities Globally

1. Technological Advances and Industry Applications

Advances in AI and deep learning techniques have spurred a sharp increase in GenAI patent activity. The introduction of transformer models in 2017 and the advent of popular applications like ChatGPT in 2022 have contributed to this surge. The share of GenAI patent publications among all AI patents rose from 4.2% in 2017 to 6.1% in 2023, indicating a growing focus on this technology.

2. Impact of Popular GenAI Applications

Over 25% of all GenAI patents and 45% of all GenAI scientific papers were published in 2023 alone. Interestingly, OpenAI, a key player in the GenAI field, did not file any patents for its research activities until early 2023. This can be attributed to its non-profit origins and the open-access approach of its research initiatives.

Patent Regimes and Regulatory Insights

1. Comparative Analysis of Global Patent Regimes

One must consider the maturity of patent regimes and the threshold levels they set for awarding GenAI patents while analyzing these numbers across countries. China's patent regime, for instance, is relatively mature, with more than 40,000 of its GenAI patents filed within the country between 2014 and 2023. In comparison, the United States saw over 10,700 patents within its jurisdiction, while 98% of India's 1,350 patents were filed domestically.

2. The Need for a Defined Framework in India

To foster AI-related inventions, it is crucial for India to establish a well-defined eligibility framework for GenAI inventions. The increase in GenAI patenting activity in India since 2021 highlights the need for a robust regulatory framework that supports innovation while maintaining intellectual property rights.



India's Position in the Global GenAI Landscape

Economic Impact and Future Prospects



[Source: The Economic Times]

1. Projected Economic Benefits of GenAI

India's Position in the Global GenAI Landscape

The economic impact of GenAI is expected to be substantial. An EY report from May 2024 estimates that GenAI could boost India's GDP by 359 – 438 billion by 2030, with a cumulative impact of 1.2-1.5 trillion over the next seven years. This underscores the transformative potential of GenAI across various sectors.

2. Government Initiatives to Promote AI

The Indian government has recognized the strategic importance of AI and GenAI. The Ministry of Electronics and Information Technology (MeitY) recently launched the Global India AI Summit on July 3, 2024, featuring key dignitaries and emphasizing a global approach to addressing AI risks. Such initiatives aim to position India as a global leader in AI and GenAI technologies.

Application of GenAI Across Industries

1. Dominant Sectors and Use Cases

GenAI patents predominantly cover image and video data (17,996 inventions), followed by text (13,494 inventions) and speech/music (13,480 inventions). The technology is rapidly spreading across industries, including life sciences, manufacturing, transportation, security, and telecommunications.

2. Economic and Industrial Ramifications

GenAI is poised to revolutionize numerous industries by enhancing content creation and productivity. A recent McKinsey study estimates that GenAI could add between 2.6 trillion and 4.4 trillion annually across a wide range of industry use cases. Industries such as banking, high tech, and life sciences are expected to experience the most significant impact.

Challenges and Opportunities for India

1. Barriers to GenAI Innovation

Despite the promising growth, India faces several challenges in scaling its GenAI innovations. These include the need for more substantial investment in R&D, a skilled workforce, and a supportive regulatory environment. Addressing these challenges will be crucial for India to fully capitalize on the potential of GenAI.

2. Strategic Focus Areas for Growth

To further accelerate GenAI innovation, India needs to focus on key strategic areas. These include enhancing collaboration between academia, industry, and government, fostering a culture of innovation and entrepreneurship, and investing in digital infrastructure and skills development.

3. Potential for Global Leadership

India's Position in the Global GenAI Landscape

India has the potential to emerge as a global leader in GenAI, given its rapid growth and increasing focus on AI technologies. By leveraging its strengths in information technology and a burgeoning digital economy, India can drive significant advancements in GenAI and contribute to the global innovation ecosystem.

The Path Forward for GenAI in India

1. Sustaining Momentum and Building Capacity

India's progress in GenAI is commendable, but sustaining this momentum will require concerted efforts from all stakeholders. Building capacity in terms of research, infrastructure, and regulatory support will be key to maintaining India's growth trajectory in the GenAI sector.

2. Collaborative Efforts and Policy Support

Collaborative efforts between the government, industry, and academia will be essential to create a conducive environment for GenAI innovation. Policy support that fosters research and development, protects intellectual property, and encourages investment in AI technologies will be critical.

3. Harnessing the Potential of GenAI

As GenAI continues to transform industries and drive economic growth, India stands at a pivotal juncture. By addressing the challenges and capitalizing on the opportunities, India can harness the full potential of GenAI, positioning itself as a global hub for AI innovation and technology.