Weekly Data Bytes

PM Modi, Takaichi deepen India-Japan cooperation across defence, technology, energy and trade

- India and Japan on Thursday unveiled an ambitious roadmap to further strengthen their Special Strategic and Global Partnership, with Prime Minister Narendra Modi and Japanese Prime Minister Sanae Takaichi agreeing to deepen cooperation in defence, economic security, artificial intelligence (AI), clean energy, high-speed rail, resilient supply chains and people-to-people exchanges.

- Following the 16th India-Japan Annual Summit in New Delhi, the two leaders reaffirmed their commitment to advancing bilateral ties based on three priority pillars — defence and security cooperation; economic partnership, including economic security, energy resilience, technology and innovation; and stronger people-to-people exchanges. They said a stronger India-Japan partnership would contribute to a free, open, resilient and prosperous Indo-Pacific amid an increasingly uncertain global geopolitical environment.

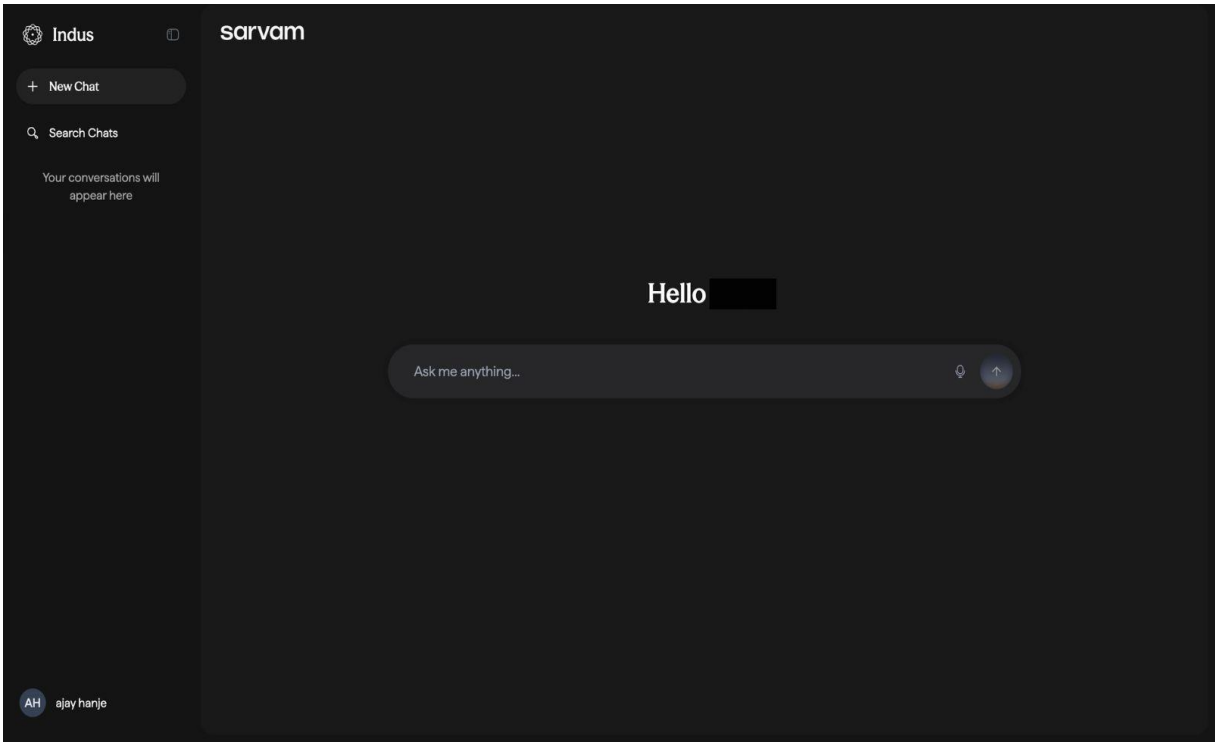
Source: https://ddindia.co.in/2026/07/pm-modi-takaichi-deepen-india-japan-cooperation-across-defence-technology-energy-and-trade/

How technological innovations help India build safe, sustainable road network

- As India rapidly scales its highway infrastructure to achieve its goal of becoming a developed nation by 2047, the definition of infrastructure modernisation has also evolved beyond basic expansion of roads and highways.
- Modernisation is no longer seen as constructing multi-lane roads or improved connectivity, but it also includes ensuring the safety and sustainability of the road network so that it protects both human life and the environment.
- Accordingly, India's road infrastructure modernisation is increasingly focused on these important aspects.

Source: https://indianexpress.com/article/upsc-current-affairs/upsc-essentials/how-technological-innovations-help-india-build-safe-sustainable-road-10768508/

Sarvam launches Indus AI chat app, taking on global giants



- India's AI startup Sarvam AI has launched its Indus chat app for web and mobile users, stepping into a market currently led by global names such as OpenAI, Anthropic, and Google.
- The rollout comes at a time when India has become one of the fastest-growing markets for generative AI tools. OpenAI CEO Sam Altman recently said ChatGPT has crossed 100 million weekly active users in India, while Anthropic noted that India accounts for nearly 6 per cent of global usage of its Claude chatbot. The numbers underline how competitive the space has become.

Powered by a 105B-parameter model

- The Indus app runs on Sarvam's newly unveiled 105-billion-parameter large language model, known as Sarvam 105B. The startup introduced this model, along with a smaller 30B version, earlier this week at the India AI Impact Summit in New Delhi.

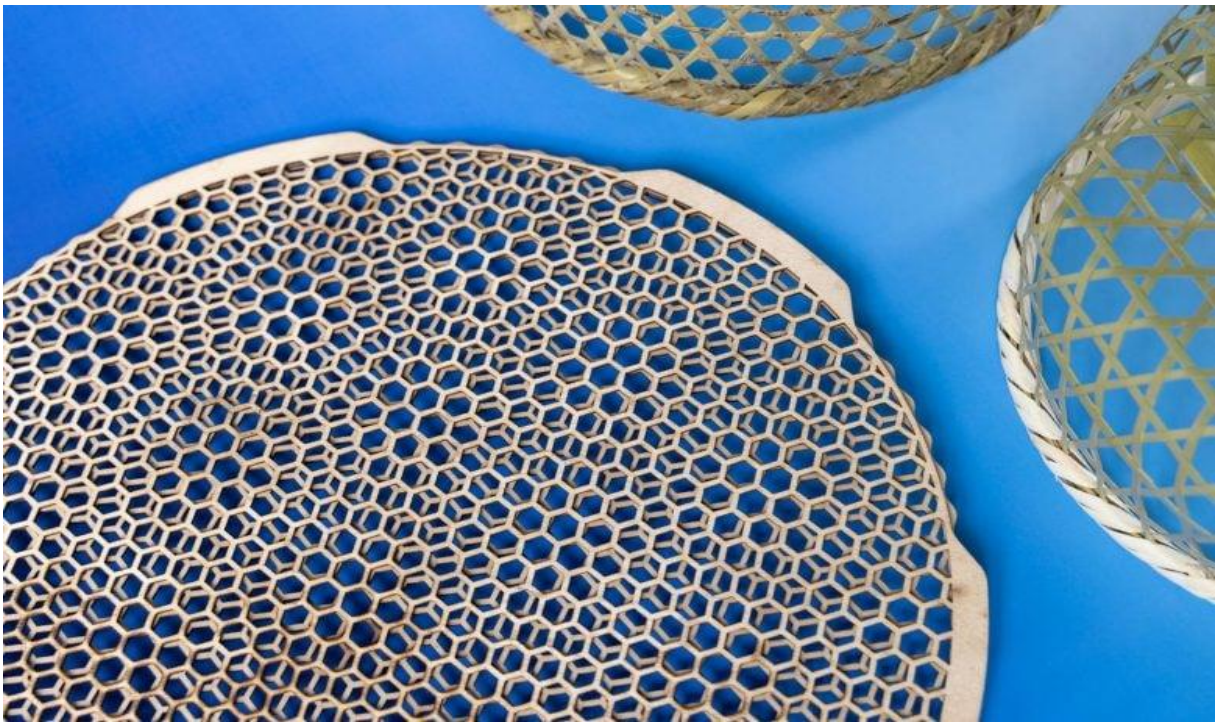
Source: https://indianexpress.com/article/technology/tech-news-technology/sarvam-launches-indus-ai-chat-app-taking-on-global-giants-10544705/

Startups power Indian quantum computing push with homegrown innovation

- Artificial intelligence (AI) upending the technology industry is in the headlines, but a quieter disruption is gathering pace: Quantum computing. For India, a critical hub in the global technology ecosystem, the stakes are high. If the government's road map succeeds, homegrown startups could become key players in the "Q revolution".
- India's plans got a boost in April when it developed a 1,000-km-long quantum network — the longest outside China — for ultra-secure communication and future quantum internet infrastructure.
- Bengaluru-based QNu Labs created the network and is now gearing up to lead the global quantum security solutions market. Organisations worldwide, including defence forces, are using this technology to upgrade standard encryption and shield sensitive data from future quantum hacker attacks. Beyond serving Indian banking, telecom, and defence clients, QNu has expanded into the United States and West Asia.

Source: https://www.business-standard.com/technology/tech-news/startups-power-indian-quantum-computing-push-with-homegrown-innovation-126052400729_1.html

The Search for Room Temperature Superconductors Just Got a Huge AI Boost



- An international team of researchers has demonstrated a new way to discover superconductors much faster by combining machine learning with advanced quantum physics. The approach allows scientists to sift through an almost limitless number of possible material combinations and pinpoint the most promising candidates for superconductivity.
- The breakthrough, led by the SuperC consortium, has already resulted in the discovery of two new superconducting materials. According to Aalto University Professor Päivi Törmä, who leads the collaboration, the method could significantly accelerate the search for new superconductors.
- Superconductors can carry electricity with zero electrical resistance because of a quantum effect that appears only at extremely low temperatures. They are essential for technologies including quantum computers, MRI and other neuroimaging systems, fusion reactors, and high-speed maglev trains.

Source: https://scitechdaily.com/the-search-for-room-temperature-superconductors-just-got-a-huge-ai-boost/