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समाचार पत्रों से चयित अंश
Newspapers Clippings

डीआरडीओ समुदाय को डीआरडीओ प्रौद्योगिकियों, रक्षा प्रौद्योगिकियों, रक्षा नीतियों, अंतर्राष्ट्रीय संबंधों और विज्ञान एवं प्रौद्योगिकी की नूतन जानकारी से अवगत कराने हेतु दैनिक सेवा

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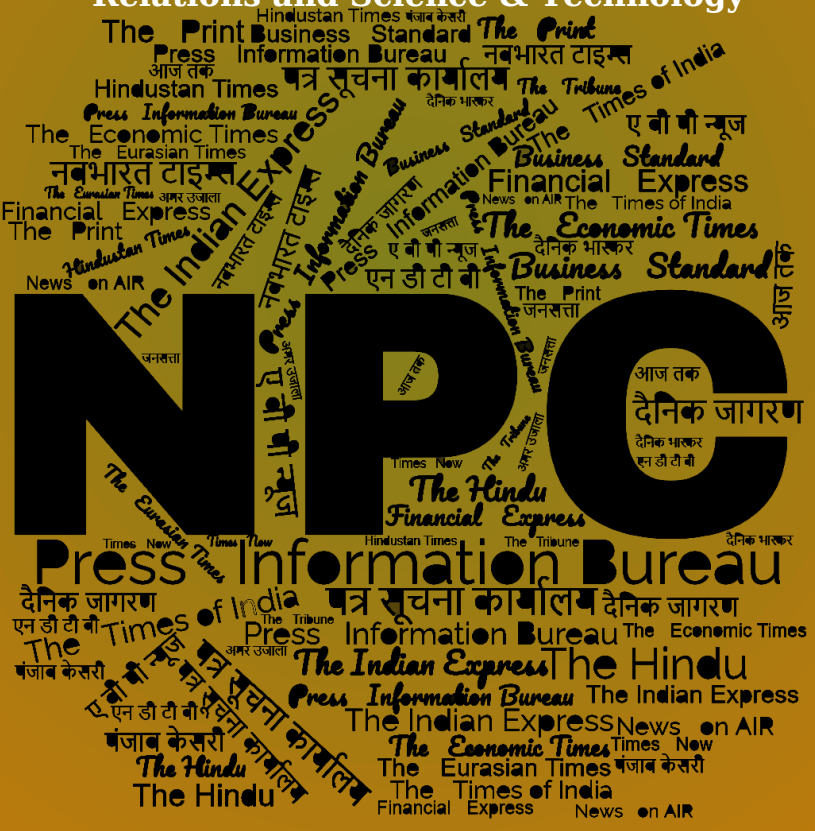

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Ministry of Defence

Mon, 19 Feb 2024

Lieutenant General Upendra Dwivedi Takes over as Vice Chief of the Army Staff from Lieutenant General MV Suchindra Kumar

Lieutenant General Upendra Dwivedi has assumed the appointment of the Vice Chief of the Army Staff on 19 February 2024. On assumption of appointment, Lieutenant General Upendra Dwivedi laid wreath at the National War Memorial and was accorded Guard of Honour at the South Block Lawns.

Prior to taking over as the Vice Chief of the Army Staff, Lieutenant General Upendra Dwivedi was tenanting the appointment of General Officer Commanding-in-Chief, Northern Command from 2022-2024 in extremely challenging operational environment.

An alumnus of Sainik School, Rewa (MP), Lieutenant General Upendra Dwivedi was commissioned into 18 JAMMU & KASHMIR RIFLES in 1984, a unit he later commanded. The General officer has had a unique distinction of balanced exposure of both Northern and Western Theatres.

During his illustrious career spanning across 39 years, he has held command appointments in challenging operational environments, spanning the length and breadth of the country. He commanded his unit in Kashmir Valley as well as in Rajasthan. He has been Sector Commander and Inspector General Assam Rifles in intense Counter Terrorism environment in the North East. Lieutenant General Upendra Dwivedi commanded the Rising Star Corps with operational role along the Western Borders. He later commanded the prestigious Northern Army from 2022-24 in extremely challenging operational environment along both northern and western borders. During his command, he provided Strategic guidance & Operational oversight for planning and execution of sustained operations along the northern and western borders, besides orchestrating the dynamic Counter-Terrorism operations in J&K. During this period, the General officer was actively engaged in the ongoing negotiations with China in resolving the vexed border issue. He was also involved in modernisation and equipping of the largest Army Command of Indian Army, where he steered the induction of indigenous equipment as part of Atmanirbhar Bharat. He synergised with people of Jammu, Kashmir and Ladakh for convergent Nation-Building outcomes and infrastructure development.

Besides the challenging command assignments, Lieutenant General Upendra Dwivedi has tenanted important staff appointments in Headquarters Armoured Brigade, Mountain Division, Strike Corps and Integrated HQ (Army).

As Director General Infantry, he had steered and fast-tracked capital procurement of weapons for the three services, leading to significant and visible capability enhancement for our Armed Forces. As Deputy Chief of Army Staff (Information System & Coordination), the General officer gave impetus to automation and absorption of niche technologies in the Indian Army. Being a technology enthusiast, he worked towards enhancing the technical threshold of all ranks in Northern Command and pushed for 'Critical and Emerging Technologies' like Big Data Analytics, AI, Quantum and Blockchain-based solutions.

The General officer has held instructional appointments to include tenures at Infantry School and Army War College, Mhow. The General officer's two overseas tenures include Somalia, as part of HQ UNOSOM II and Seychelles as Military Advisor to the Govt of Seychelles.

The General officer has attended the Defence Services Staff College, Wellington & Higher Command Course at AWC, Mhow. The General officer was conferred 'Distinguished Fellow' in the coveted NDC equivalent course at USAWC, Carlisle, USA. He has an M Phil in Defence & Management Studies, in addition to the two Master's Degrees in Strategic Studies and Military Science including one from USAWC, USA. The General officer has also authored / presented articles in various professional forums / journals. He has pioneered the first ever compendium on Indo - Myanmar Border Management.

Lieutenant General Upendra Dwivedi took over as the Vice Chief of the Army Staff from Lieutenant General MV Suchindra Kumar, who now has been appointed as the General Officer Commanding-in-Chief, Northern Command. He has rich experience in operations, intelligence, operational logistics, force structuring and modernisation initiatives.

https://pib.gov.in/PressReleasePage.aspx?PRID=2007053

Press Information Bureau
Government of India

Ministry of Defence

Mon, 19 Feb 2024

MSMEs have Made Signification Contribution in Defence Production Sector – Raksha Rajaya Manrti Ajay Bhatt

RRM inaugurates new plant of Nibe Limited in Pune

Raksha Rajya Mantri Shri Ajay Bhatt today said the vision of Prime Minister Narendra Modi has resulted in growth of Micro Small and Medium Enterprises (MSME) in the country for the production of defence related items. He emphasized that the Government is keen on 'Atmanirbharata' in defence production sector. He also said with the formation of defence PSUs the competition has increased and it will be benefited for procuring quality material.

Raksha Rajya Mantri inaugurated a new plant of Nibe Limited, a MSME venture in Pune. Shri Uday Samant , Minister for Industries , Govt. of Maharashtra , Chief of Naval Staff Admiral R Hari Kumar PVSM, AVSM, VSM, ADC and other dignitaries were present on the occasion.

Elaborating the change in defence sector RRM said earlier we used to buy arms and ammunitions from other countries but now with the development of various indigenous projects the institutions like HAL, DRDO have became significant worldwide. Recalling the historic contribution of Chatrapati Shivaji Maharaj he paid his tributes to him.

Shri. Uday Samat lauded the efforts of Nibe limited in the field of defence manufacturing. He also informed that the Maharashtra government is organizing MSME Defence expo from 24 to 26 February 24 in Pune with the participation of prominent private industries along with other defence establishments.

Admiral R Hari Kumar has reiterated Navy's commitment for being Atmanirbhar . He said the Indian Navy is progressing in all its operations to became self sufficient. He expressed his confidence that by 2047 the target of Atmanirbhar Navy would be achieved. He also appealed the industries and MSMEs particular to come forward for this goal.

https://pib.gov.in/PressReleasePage.aspx?PRID=2007169

Press Information Bureau
Government of India

Ministry of Defence

Mon, 19 Feb 2024

Visit of Admiral R Hari Kumar, Chief of the Naval Staff to Military Institute of Technology, Pune on 19 Feb 24

Need to redesign and rebuild our traditional war fighting machinery to adapt to emerging paradigms of future wars: Adm R Hari Kumar, CNS

Admiral R Hari Kumar, Chief of the Naval Staff has stressed upon the need to redesign and rebuild our traditional war fighting machinery to adapt to emerging paradigms of future wars. Speaking on "Maritime Challenges of India and Indian Navy's Endeavours" at Military Institute of Technology (MILIT), Girinagar, Pune on 19 Feb 2024, CNS emphasized on the vision of the Indian Navy as the Preferred Security Partner.

Adm R Hari Kumar underscored the significance of Indian Ocean Region, its maritime challenges and emphasised the need for a self – reliant approach and enhanced collaborative efforts toward ensuring Maritime security, highlighting the recent anti-piracy operations undertaken by IN warships. The CNS also highlighted the role of techno-warriors in shaping the armed forces in era of jointness and emphasised the need to integrate niche technologies in future warfare.

The Chief of Naval Staff's visit to MILIT in Pune marks the auspicious occasion of birth anniversary of Chhatrapati Shivaji Maharaj, the great Indian warrior, who laid the foundation of modern Indian Navy.

The CNS also visited newly established labs at MILIT and congratulated MILIT for its role in shaping officers of the three services including officers from Friendly Foreign Counties as techno-warriors, future commanders and Staff Officers.

https://pib.gov.in/PressReleasePage.aspx?PRID=2007223

Press Information Bureau
Government of India

Ministry of Defence

Mon, 19 Feb 2024

Sarang Helicopter Display Team all Set for Singapore Airshow 2024

After arriving at Singapore on 12 February 2024, the Sarang Helicopter Display Team of the Indian Air Force (IAF) conducted its first practice display on 18 February 2024. The team is operating from the Changi airbase of the Republic of Singapore Air Force (RSAF). The Singapore Airshow is scheduled to commence on 20 February 2024. The airshow features a variety of display teams from all across the globe. The show also features leading aircraft and system manufacturers and operators showcasing their products.

The Hindustan Aeronautics Limited (HAL), manufactured Advanced Light Helicopter (Dhruv), which the Sarang team operates, is featuring in the show for the very first time. However, the first international display for the Sarang team also happened to be at Singapore for the Asian Aerospace Airshow at Changi Exhibition Center in 2004.

The Sarang team is performing a four helicopter display for the audience at the Singapore Airshow this year. The display is designed to highlight the ALH Dhruv's agility and manoeuvrability, as well as the high degree of skills of the IAF pilots flying these machines. The indigenously manufactured ALH and its advanced variants are operated by all the military services of India. The successful induction and operational utilisation of this platform is one of the glowing success stories of self-reliance (Aatmanirbharta) in the defence sector.

https://pib.gov.in/PressReleasePage.aspx?PRID=2006996

Press Information Bureau
Government of India

Ministry of Defence

Mon, 19 Feb 2024

A Two-day INDUS-X Summit to be Held in New Delhi

The much-anticipated INDUS-X Summit is scheduled to be held on February 20-21, 2024 in New Delhi, marking a significant milestone in the collaborative efforts between India and the United States in defence innovation. Organised by Innovations for Defence Excellence (iDEX) under the Department of Defence Production, Ministry of Defence, and Department of Defence (DoD), United States, in conjunction with the U.S.-India Business Council and Society of Indian Defence Manufacturers (SIDM), the summit aims to be a pivotal event driving strategic technology partnerships and defence industrial cooperation between India and the USA.

Since its launch in June 2023 during the State Visit of Prime Minister Shri Narendra Modi to the US, the India-U.S. Defence Acceleration Ecosystem (INDUS-X) has been at the forefront of expanding bilateral ties in defence innovation. Now, with the INDUS-X Summit, stakeholders from both nations will converge in New Delhi to explore and capitalise on emerging opportunities.

The two-day catalyst summit will feature a dynamic line-up of activities designed to foster collaboration, innovation, and knowledge exchange. From panel discussions and workshops to senior leaders forums and joint challenge winner felicitations, the agenda is packed with insightful sessions aimed at charting the future trajectory of U.S.-India defence relations. Defence innovation stakeholders from across governments, academic and research organisations, investors, defence start-ups, technology incubators, industry associations, and other start-up enablers will come together to develop ambitious initiatives to drive INDUS-X forward. The Joint INDUS X challenge winners under the IMPACT will be felicitated during the event.

The INDUS-X Summit represents a pivotal moment for advancing defence innovation and collaboration between India and the United States, setting the stage for future technological advancements and strategic partnerships, stimulating cross-national science and technology networks, and building the connective issue between domestic entrepreneurs, markets, skilling institutions, government labs, and investment capital, which is critical to building successful innovation ecosystems.

https://pib.gov.in/PressReleasePage.aspx?PRID=2007203

The Indian EXPRESS

Mon, 19 Feb 2024

'Navy Conducting Anti-drone Ops in North Arabian and Red Sea, will Protect anyone in Distress'

Stating that the indian navy is conducting anti-drone operations in north arabian sea and red sea, chief of naval staff admiral r harikumar said the navy's aim is to protect countrymen and anyone else who is in distress at the sea.

The Navy Chief was speaking on the sidelines of an event marking the inauguration of a new plant of Nibe Limited in Chakan set up for manufacturing critical systems for the defence sector.

During the media interaction, when asked about cooperation with other Navies for tackling piracy, the Navy Chief said, "We are cooperating with friendly foreign navies, largely for information exchange. We are the largest resident naval power in the Indian Ocean region. We are not going to permit anybody to disrupt the security, stability and safety in this region."

"We have deployed a large number of ships, including three to four, near Somalia. India is going to teach a very hard lesson to those who resort to piracy. We have started boarding ships. Every single boat, dhow or vessel we suspect or if we find any piracy triggers, we are taking stringent action. The government promulgating the Anti Piracy Act, 2022, has enabled us to perform our duties better. We are also undertaking anti-drone operations in the North Arabian Sea and Red Sea. Our aim is to protect our countrymen and anyone else who is in distress, irrespective of nationality," said Admiral R Harikumar.

When asked about a Pakistani crew rescued by the Indian Navy in January, he said, "We have to help whosoever is in distress and we don't hesitate in doing that. We rescued them from pirates, who tried to take them hostage. Our commandos went and got them released."

The newly launched facility of the Nibe Limited features 16m and 12m Vertical Machining Centres (VMC). The plant extends support to indigenous modular bridges, Sarvatra bridge system, missile launcher system components fabrication, precision machining among others.

Speaking about the new plant, the Navy vhief said, “A substantial capability has been built in a very short time. It is an important step in the direction of Atma Nirbharta.” The inauguration ceremony was attended by Minister of State for Defence Ajay Bhatt, state industries minister Uday Samant, and chairperson and managing director of the company Ganesh Ramesh Nibe.

“We, as a Navy, have given a commitment to our national leadership that by 2047, we will become Atmanirbhar (self-reliant). For that, the industry has a major role to play. We have the Indian Navy Innovation and Indigenisation Organisation, NIIO, set up two years ago. We have organised Swavalamban (self-reliance) seminars, in which we challenge on what are the technologies we are looking for. Many MSMEs have come forward… we have signed around 118 contracts and orders worth Rs 3,000 crores have been placed,” said Admiral R Harikumar.

When asked about the upcoming MSME Defence Expo in Pune, the Navy Chief said, “The Navy is specially handholding the MSME sector. The expo is a great initiative by the Government of Maharashtra. I am told that more than 1,000 MSMEs are participating. The Navy will have a stall there.”

Stating that there is a challenge of funding MSMEs, the Navy Chief said, “We had suggested that there should be a banking institution for strategic development. This was taken up through the ministry. We are looking at strengthening the Small Industrial Development Bank of India (SIDBI) with a vertical and specialised teams for this purpose.”

https://indianexpress.com/article/cities/pune/navy-conducting-anti-drone-ops-north-arabian-red-sea-9169815/

The Indian EXPRESS

Tue, 20 Feb 2024

Army to Set up New Corps for Operations along LAC

The Army is converting its Headquarters Uttar Bharat (HQ UB) area into a full-fledged operational corps — a move that will shift its focus towards operations along the Line of Actual Control (LAC) from its current responsibility of peacetime duties, The Indian Express has learnt.

Based in Bareilly, the HQ UB area is currently a static formation looking after peacetime locations and training establishments of Uttarakhand and western Uttar Pradesh, in addition to the LAC running along Himachal Pradesh and Uttarakhand — also referred to as the central theatre.

A corps comprises elements of all arms and services with adequate reserves to carry out operations in its area of responsibility. It is structured to hold three divisions, but can hold more or less as per existing operational requirements. Each division comprises 15,000 to 18,000 troops.

Earlier, the UB area had only one brigade and a few scouts battalions under it to patrol key border areas. But considering frequent face-offs with Chinese troops at certain disputed points along the LAC and an enhanced focus on dominating the border, the formation was gradually upgraded and its combat capability increased by putting three independent brigades and an infantry division based in Uttarakhand under it.

The formation is currently referred to as Combatised UB Area.

While a combatised area HQ has fighting elements, a traditional corps has additional artillery brigades, engineering brigades and other logistics components. The newly reconstituted corps will have all the troops and equipment from other arms and services such as artillery, engineers and

aviation, among others, under its direct command to successfully conduct operations in the central theatre.

As per officials, the increased troop density in the area and additional emerging operational requirements have necessitated a change of focus towards operational tasks.

The move was on the cards for almost a year.

Changing the static formation to an operational corps, officials added, would change the focus of the organisation, which will now be on carrying out various operational tasks even as sub areas and training establishments continue to focus on their traditional peacetime roles.

So far, these units did not come under UB Area in its role as a peacetime formation.

“The mental mindset and operational thought process will also undergo a change, essential to keep the prime focus on the LAC,” an official said.

Officials said that raising a new headquarter would also have required greater manpower and other assets and hence the decision was made to convert the existing area headquarter into a corps headquarter. The change is being done with the existing authorised manpower of the Army.

Officials said that raising this corps will help bolster development of border infrastructure and combat logistics facilities and the corps HQ will be the centralised response agency for all security threats in the region.

https://indianexpress.com/article/india/army-to-set-up-new-corps-for-ops-along-lac-9170158/

THE ECONOMIC TIMES

Tue, 20 Feb 2024

₹60,000-Crore Sukhoi Fighter Upgrade Begins, to Involve Private Sector in Big Way

A comprehensive upgrade of the mainstay Su 30MKI fighter jet fleet that will see the aircraft get new radars, mission control system, electronic warfare capabilities and integration of new weapon systems will see heavy participation from the private sector.

The ₹60,000-cr upgrade, approved by the defence ministry last year, will be done by Hindustan Aeronautics Limited, with support from the Defence Research and Development Organisation (DRDO) and several major components will be procured from the private sector.

"The upgrade will see significant private sector participation, with HAL as the lead integrator," CMD of HAL CB Ananthakrishnan told ET.

The project, which has been put on fast track by the Air Force, is to be carried out in two phases. The first will involve new avionics and radars for the aircraft while the second phase will concentrate on flight control systems. Several Russian origin systems are being replaced by indigenous options.

A majority of the work will involve indigenous systems that are to be fitted onboard the platform to give it a combat edge. This will include a new indigenous radar that will enable the aircraft to pick up and engage targets at much larger distances. The radar in older generation jets had been a point of concern for the Air Force as it would get outperformed by systems used by adversaries.

In the first phase, the aircraft will also get a new Electronic Warfare System to jam incoming threats and disrupt enemy communication. Besides, the fighters are to get new indigenous Infra Red Search and Track systems that will greatly enhance the ability to engage air-to-air and air-to-ground targets.

Work on integrating the aircraft with the new systems could begin this year, with the Air Force keen on modernising the entire fleet at the earliest. Close to 90 of the fighters are to be upgraded in the first tranche that would be conducted entirely in India.

India ordered 272 of the fighter jets from Russia that form the mainstay of the Air Force fighter fleet. Last year, an order for 12 more jets was also cleared for Rs 11,000 crore. These jets would be manufactured by HAL with indigenous content of over 50%.

Over 600 aircraft of the Su 27/30 type have been manufactured and large operators include Vietnam, Malaysia, Indonesia and Algeria. This opens up a significant export market for the upgrades as well.

https://economictimes.indiatimes.com/news/defence/60000-crore-sukhoi-fighter-upgrade-begins-to-involve-private-sector-in-big-way/printarticle/107831860.cms

THE ECONOMIC TIMES

Mon, 19 Feb 2024

India Hosts Milan Naval Exercise; Around 50 Countries Participating

India on Monday kick-started a nine-day mega naval exercise in Visakhapatnam with participation of around 50 navies that came amid the fractious geopolitical environment including growing global concerns over deteriorating security situation in the Red Sea. Navies from the US, Japan, Australia, France, Bangladesh, South Korea, Vietnam, Indonesia and Malaysia, among others, are participating in the 12th edition of the 'Milan' exercise that is aiming to bolster maritime cooperation among like-minded nations.

The exercise commenced with the arrival of 15 warships and one maritime patrol aircraft from friendly foreign countries.

From the Indian Navy, nearly 20 ships including aircraft carriers Vikrant and Vikramaditya and nearly 50 aircraft including MiG 29K, Light Combat Aircraft Tejas and P-8I long-range maritime reconnaissance and anti-submarine warfare aircraft are participating in the exercise.

Milan is a biennial multinational naval exercise which started in 1995 with the participation of Indonesia, Singapore, Sri Lanka and Thailand in consonance with India's 'Look East' policy. The exercise flourished under the aegis of Andaman and Nicobar Command till its 10th edition.

The harbour phase of the exercise is from February 19 to 23. The sea phase featuring various complex drills and manoeuvres will be from February 24 to 27.

The formal opening ceremony will take place on Wednesday, Navy officials said.

The harbour phase includes the opening ceremony, international city parade, international maritime seminar, Milan Tech Expo and table top exercise, among others.

During the sea phase, the participating navies will conduct advanced air defence, anti-submarine and anti-surface warfare drills, the officials said.

Gunnery shoots on aerial and surface targets, manoeuvres and underway replenishment would also be conducted.

The naval exercise will involve large-force manoeuvres, advanced air defence operations, anti-submarine warfare and anti-surface operations, the officials said.

"Milan 2024 aims to strengthen regional cooperation and maritime security, foster interoperability and understanding between participating navies and provide a platform for sharing best practices and expertise," Indian Navy spokesperson Vivek Madhwal said.

India's growing strategic importance in the Indo-Pacific region has further elevated the significance of the Milan exercise, he said, adding it has become an attractive platform for nations to build partnerships, exchange ideas, and enhance maritime security.

The previous edition of the exercise took place in 2022 in Visakhapatnam.

https://economictimes.indiatimes.com/news/defence/india-hosts-milan-naval-exercise-around-50-countries-participating/articleshow/107829707.cms?from=mdr

Business Standard

Mon, 19 Feb 2024

Indian Navy will Become 'Aatmanirbhar' by 2047: Admiral R Hari Kumar

Indian Navy will become "aatmanirbhar" (self-reliant) by 2047, Admiral R Hari Kumar said on Monday and also appealed to industry for help in achieving this goal.

He said self-reliance meant manufacturing every ship, submarine, aircraft, and weapon system in India.

"The Indian navy is committed to achieving aatma-nirbharta and we have promised the national leadership that we will become completely aatma-nirbhar by 2047, and for that, we will require the help of industry," said the chief of naval staff.

He was speaking after inaugurating a manufacturing plant of Nibe Defence and Aerospace, an MSME working on various defence projects, in Chakan. Minister of State for Defence, Ajay Bhatt, was also present.

This facility is strengthening our ability to make our own weapon system in the country in line with the national vision for self-reliance, the Navy chief said.

"Becoming 'aatmanirbhar' by 2047 means that every ship, submarine, aircraft, and weapon system will be made in India," Admiral Hari Kumar said.

On the occasion, he informed about various levels of self-reliance attained in the defence ship sector.

"A ship has three components - float, move, and fight. In the float component, we have achieved almost 95 per cent (self-reliance). In the 'move' component, we are somewhere at 65 per cent and in the 'fight' component, we are at 55 per cent.

"A lot of thrust has been given to the move and fight components, which means all our weapons, weapon systems, sensors, radars, missile launchers, missiles...all these need to be made in India and a lot of work is being done in that direction," the Navy chief said.

Making all these weapon systems in India is not merely an economic necessity but a need for the strategic autonomy of the country, the Admiral added.

He said the Indian Navy is supporting MSMEs, and particularly in Nibe Ltd's case, they are making the Brahmos launchers for ships.

"The Naval Innovation and Indigenisation Organisation (NIIO) had organised a webinar in which we gave challenges to propose Navy technology.

The Navy filtered over 300 proposals out of more than 1,100 received from MSMEs," Admiral Hari Kumar said.

He said about 518 contracts were signed and more are in the pipeline.

"Some technologies are unique and have proven game-changers for us. It gives us the strategic autonomy that we require in times of conflict," the Navy chief added.

Admiral Hari Kumar also spoke about the funding challenge for MSMEs and the suggestion to set up a strategic development bank in the country.

"The issue was raised with the Ministry of Defence and the Ministry of Finance. It is recommended to the government to have a dedicated vertical in the bank to look after the requirements of MSMEs working in the field of defence," the Navy chief added.

Nibe Defence and Aerospace is a state-of-the-art facility with a robust production capacity, dedicated to the production of a comprehensive array of critical sub-systems to meet the evolving needs of the defence industry, as per a release.

Balakrishnan Swamy, CTO (Chief Technology Officer), Nibe Limited, said they are elated to unveil the new state-of-the-art manufacturing plant, which signifies the company's unwavering commitment to fostering innovation in the defence industry.

"Our ultimate goal is to make the Indian defence sector aatmanirbhar and amplify entrepreneurship in the industry," he added.

The facility features 16m, and 12m Vertical Machining Centres (VMC). The plant extends support to indigenous modular bridges, the sarvatra bridge system, missile launcher system components fabrication, precision machining, and the manufacturing of EVs.

MoS Bhatt said the vision of Prime Minister Narendra Modi has resulted in the growth of Micro Small and Medium Enterprises in the country for the production of defence-related items.

He emphasised that the government is keen on 'aatmanirbharata' in the defence production sector.

"With the formation of defence PSUs, the competition has increased which will be beneficial for procuring quality material," Bhatt said.

"Earlier we used to buy arms and ammunition from other countries but now with the development of various indigenous projects, institutions like HAL, DRDO etc, have become significant worldwide," he added.

Bhatt also recalled the historic contribution of Chhatrapati Shivaji Maharaj on the occasion of his birth anniversary and paid tributes.

https://www.business-standard.com/india-news/indian-navy-will-become-aatmanirbhar-by-2047-admiral-r-hari-kumar-124021901050_1.html

United News of India
India's Multi Lingual News Agency

Mon, 19 Feb 2024

Prof Aditi Sen De Becomes First Woman Scientist to Win G D Birla Award

In a ground-breaking moment for Indian science, Prof. Aditi Sen De has been awarded the prestigious G. D. Birla Award for Scientific Research for the year 2023.

The award, established in 1991, recognises exceptional scientific research conducted by Indian scientists below the age of 50.

Prof. Aditi Sen De, a distinguished physicist from the Harish-Chandra Research Institute in Prayagraj, has been honoured for her outstanding contributions to the field of Physics.

Notably, she is the first female scientist to receive this esteemed award, marking a historic milestone in the award's illustrious history.

Born in Kolkata in 1974, Prof. Aditi Sen De earned her PhD in physics from the University of Gdansk, Poland. Her research, focused on the manipulation of quantum states and their nonclassical applications, has made significant strides in the development of quantum technologies.

Her innovative concepts for quantum communication networks and contributions to quantum thermal machines showcase her commitment to advancing modern technologies.

Prof. Aditi Sen De's work includes characterising quantum resources in multipartite states, contributing to the understanding of fundamental quantum problems.

With 197 research articles to her name in the field of quantum information science, Prof. Aditi Sen De's expertise has been widely recognized. She previously received the Shanti Swarup Bhatnagar Prize for Science and Technology in 2018 and the Buti Foundation Award in 2012 for excellence in theoretical physics.

The G. D. Birla Award, carrying a cash prize of Rs 5 lakhs, is a testament to Prof. Aditi Sen De's exceptional contributions to the scientific community. The rigorous selection process, overseen by the Indian National Science Academy, emphasizes the award's prestige.

http://www.uniindia.com/prof-aditi-sen-de-becomes-first-woman-scientist-to-win-g-d-birla-award/india/news/3146507.html

THE HINDU

Mon, 19 Feb 2024

Protein Structures should be Collected as they are Precious: Breakthrough Prize Laureate

We are learning about protein sequences three thousand times faster than we are learning about protein structures. We have this enormous gap in which certain things are very easy to measure like

genetics and certain things are very hard to measure three-dimensional (3D) structures and we would love to close this gap, said John Jumper, Breakthrough Prize laureate.

Delivering the TNQ Distinguished Lectures in the Life Sciences – 2024 on 'Highly Accurate Protein Structure Predictions: Using AI to Solve Biology Problems in Minutes Instead of Years' at the JN Tata Auditorium, IISc, Mr Jumper said that protein structures should be collected as they are precious and that they should be collected into a central resource.

Mr. Jumper currently leads the AlphaFold2 project at Google DeepMind spoke about the project which has made structure predictions for over 200 million proteins.

AlphaFold is an AI system developed by DeepMind that predicts a protein's 3D structure from its amino acid sequence. The programme is said to reduce the time taken by scientists to determine protein structure apart from displaying the impact Artificial Intelligence (AI) can have on scientific discovery.

Mr. Jumper has been developing novel methods to apply AI and machine learning to protein biology.

"We really want to make AlphaFold have a wider domain and be more useful. There is a tremendous amount of interaction between protein and Deoxyribonucleic acid (DNA), protein and Ribonucleic acid (RNA), etc, so we really want to achieve this goal of whole Protein Data Bank (PDB), how do we make predictions for all the atoms that you could see within the PDB. This is still work in progress," he said.

Mr. Jumper said that data has to be diverse for machine learning.

"There are a couple of key components for ML. Data has to be diverse. Data has to be diverse as the problem you are looking to solve. Bigger and more general problems are easier to solve with ML," Mr. Jumper said.

https://www.thehindu.com/news/national/karnataka/protein-structures-should-be-collected-as-they-are-precious-breakthrough-prize-laureate/article67864373.ece

The Tribune

Tue, 20 Feb 2024

Why Big Data is Becoming Small

By Atanu Biswas

The first two decades of this century witnessed people's obsession with data. They tried to collect as much information as they could, apparently for the purpose of developing a data-driven 'winning strategy' for all facets of life, but often for what they didn't know clearly. There was an insane rush to gather data from any available source without understanding how to leverage it. The advent of the Internet and social media spurred this trend.

In recent years, generative artificial intelligence (AI) has taken centre stage. The gigantic volume of data that people stored but couldn't use has found applications. The development and effectiveness of AI systems — their ability to learn, adapt and make informed decisions — are fuelled by data. About 570 gigabytes of text data or around 300 billion words were used to 'train' ChatGPT. Similarly, the AI image-generating applications DALL-E and Midjourney used a stable diffusion algorithm that was 'trained' on 5.8 billion image-text pairs. 'Trained' means that models are taught to identify patterns in data and then produce new, related data by applying these patterns. For

instance, generative AI can produce meaningful sentences if it is ‘trained’ on English text, whereby it learns the statistical probability of a word coming after another.

An algorithm will produce inaccurate or low-quality output if it’s ‘trained’ on an insufficient amount of data. But it’s getting harder to find suitable ‘natural data’ — information derived from the real-world environment that has been either left unprocessed or is very lightly processed — which is essential for AI systems to advance. Thus, in the AI era, data is suddenly becoming scarce. Consequently, big data has shrunk to small data. The overall equation has been turned around by the AI economy’s impending data crisis.

A team of Epoch researchers published a paper in 2022 titled ‘Will we run out of data? An analysis of the limits of scaling datasets in Machine Learning’. These researchers predicted that we would run out of high-quality text data before 2026 if the current AI ‘training’ trend continued. The researchers also estimated that low-quality language data would be exhausted sometime between 2030 and 2050 and low-quality image data between 2030 and 2060. “The current trend of ever-growing ML (Machine Learning) models that rely on enormous datasets might slow down if data efficiency is not drastically improved or new sources of data become available,” they said.

In reality, to ‘train’ language models, AI developers use high-quality data from books, news stories, academic papers, Wikipedia and filtered Web content. The majority of high-quality data is created by professionals. The remaining data, which is derived from user-generated texts, is classified as low-quality. Examples of these texts include blog entries, social media posts and comments on websites. Text gleaned from social media platforms may also contain illegal content or be biased or prejudiced. Consequently, the model may be able to replicate these things. Overall, the models and, in effect, the industry as a whole may stagnate if the availability of natural data stagnates as well.

Are we then apprehending a forced pause in AI research? Incidentally, a plea to ‘Pause Giant AI Experiments’ was co-signed by many eminent people, including Tesla CEO Elon Musk, Apple co-founder Steve Wozniak and famed author Yuval Noah Harari, in an open letter last year. Well, is there a cause for concern regarding the trajectory of AI’s development because of the impending data shortage? And is there any solution?

It, however, seems plausible that with less data and perhaps even less computational power, high-performing AI systems will be able to be ‘trained’ in the coming years. This would also lessen AI’s carbon footprint. Several content producers have sued a few big companies for using their work to ‘train’ AI models. Paying people for their work might contribute to restoring some of the power imbalance that exists between AI companies and creatives. This might partially solve the data problem as well. When Hollywood actors were on strike last year, as per an MIT Technology Review article published in October, tech companies were offering a gig to out-of-work actors: get paid $150 an hour to act out a variety of emotions in front of a camera to ‘train’ AI.

Creating ‘synthetic’ or ‘simulated’ data to ‘train’ AI systems is another option. Developers can simply generate the data they need, curated to suit their AI model. According to Gartner, 60 per cent of the data for AI, up from 1 per cent in 2021, will be synthetic by the year-end.

Cost-effectiveness, the potential for data augmentation, privacy protection, the creation of scenarios and increased diversity and representativeness are some of the advantages of synthetic data. However, synthetic or simulated data might not precisely reflect real-world situations. This puts the dependability and efficiency of AI systems at serious risk. Problems regarding transparency and the threat of bias would still be present. Furthermore, to make sure synthetic data somewhat reflects real-world data and is appropriate for the intended use, it should be validated.

Synthetic data is a helpful temporary solution, but it doesn’t fully address the problem of data supply. It might work well for some uses, like face recognition, but might perform poorly for

others, like natural language processing. Because of this, companies may need to adopt a more focused approach to data production, putting quality above quantity.

Generative models don't just consume data; they produce data as well. It's getting harder to separate good data from junk data produced by spam bots, image generators, hallucinations and deepfakes. And as the information haystacks get bigger, it gets harder to find finer signals if the input data contains garbage.

What happens if this data is used to 'train' AI systems? Wouldn't the AI models be increasingly biased with such 'training'? The shadow of uncertainty looms large.

https://www.tribuneindia.com/news/comment/why-big-data-is-becoming-small-592475

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ISRO Planning another Mars Mission, to Send Lander with a Helicopter to Red Planet: Report

The Indian Space Research Organisation (Isro) is reportedly planning another ambitious mission to Mars.

As per reports, ISRO is planning to send a lander to the Red Planet. The lander after touching down on the Mars surface will deploy a rover as well as a rotocopter (helicopter), reports claimed.

As reported, the Indian space agency is planning to send a drone or rotocopter to Mars. The drone will be like that of Nasa's Ingenuity quadcopter. The Ingenuity logged 72 flights over three years at Mars. It accumulated more than two hours of flight time, travelling 18 kilometers. That's more than 14 times farther than planned, according to NASA. It soared as high as 24 metres and hit speeds of up to 36 kmph.

As per reports, Isro's rotorcraft is still in the conceptual stage. It is expected to have several instruments such as temperature sensor, humidity sensor, pressure sensor, wind speed sensor, electric field sensor, trace species and dust sensor.

The helicopter is expected to fly as high as 100 metres in the thin Martian air to profile the atmosphere of the Red Planet.

According to reports, the drone is said to be equipped with an instrument suite named the Martian Boundary Layer Explorer (Marble), designed for aerial exploration of Mars.

The report indicates that the drone will conduct vertical profiling of atmospheric factors and carry out in-situ measurements within the near-surface boundary layers of Mars.

It is anticipated that the Marble mission will yield significant data to enhance our comprehension of Martian weather patterns and the historical climate of the planet. This information is essential for forecasting future conditions and potential hazards, as well as assisting in the strategic planning of upcoming exploration missions.

Earlier in 2013, ISRO became the fourth space agency to successfully send a spacecraft to Mars orbit with its Mars Orbiter Mission (MOM), which was India's first interplanetary mission to planet Mars. It was launched onboard PSLV-C25 on November 05, 2013.

https://economictimes.indiatimes.com/news/science/isro-planning-another-mars-mission-to-send-lander-with-a-helicopter-to-red-planet-report/articleshow/107828602.cms