Gyan Ganga Institute of Technology and Sciences

THE Genesis

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'Eye-watering': Elon Musk

shuts down Russian electromagnetic warfare attack; Pentagon lauds SpaceX

SpaceX has been shipping Starlink dishes to Ukraine to help the country stay online in the face of the invasion. Elon musk-owned SpaceX shut down a Russian electromagnetic warfare attack in Ukraine last month.

In a bid to block Ukrainians net access, Russians reportedly tried to jam SpaceX's Starlink Broadband Services.

In March, SpaceX CEO Elon Musk said "Some starlink terminals were being jammed for several hours at a time". Jamming efforts were bypassed, after a software update the Starlink broadband operations were normal. On March 25, Elon Musk said, 'Starlink, at least so far, has resisted all hacking & jamming attempts'.

Reports say that since Russia's takeover of the Ukrainian territory of Crimea in 2014, the Russian military has used electronic warfare extensively in Ukraine's Donbas region — often to great effect, using electromagnetic signals to uncover the positions of Ukrainian forces and disrupt equipment such as drones. However, the current conflict may be exposing the limits of Russia's EW capability. Dave Tremper, director of electronic warfare for the office of the U.S. Secretary of defense, lauded SpaceX for shutting down the Russian EW.

Russia's halting efforts to conduct electromagnetic warfare in Ukraine show how important it is to quickly respond, and immediately shut down, such attacks, Pentagon experts said Wednesday.

Brig. Gen. Tad Clark, director of the Air Force's electromagnetic spectrum superiority directorate, said modern wars will increasingly involve electromagnetic warfare, particularly to shape the battlefield when conflicts begin.

"The next day [after reports about the Russian jamming effort hit the media], Starlink had slung a line of code and fixed it," Tremper said. "And suddenly that [Russian jamming attack] was not effective anymore. From [the] EW technologist's perspective, that is fantastic … and how they did that was eye-watering to me."

"It's a very hard problem, if you don't have well-trained operators," Tremper said. "The degree of coordination and synchronization of these types of operations is such that the undertrained operator will have a harder time pulling off those types of events successfully."

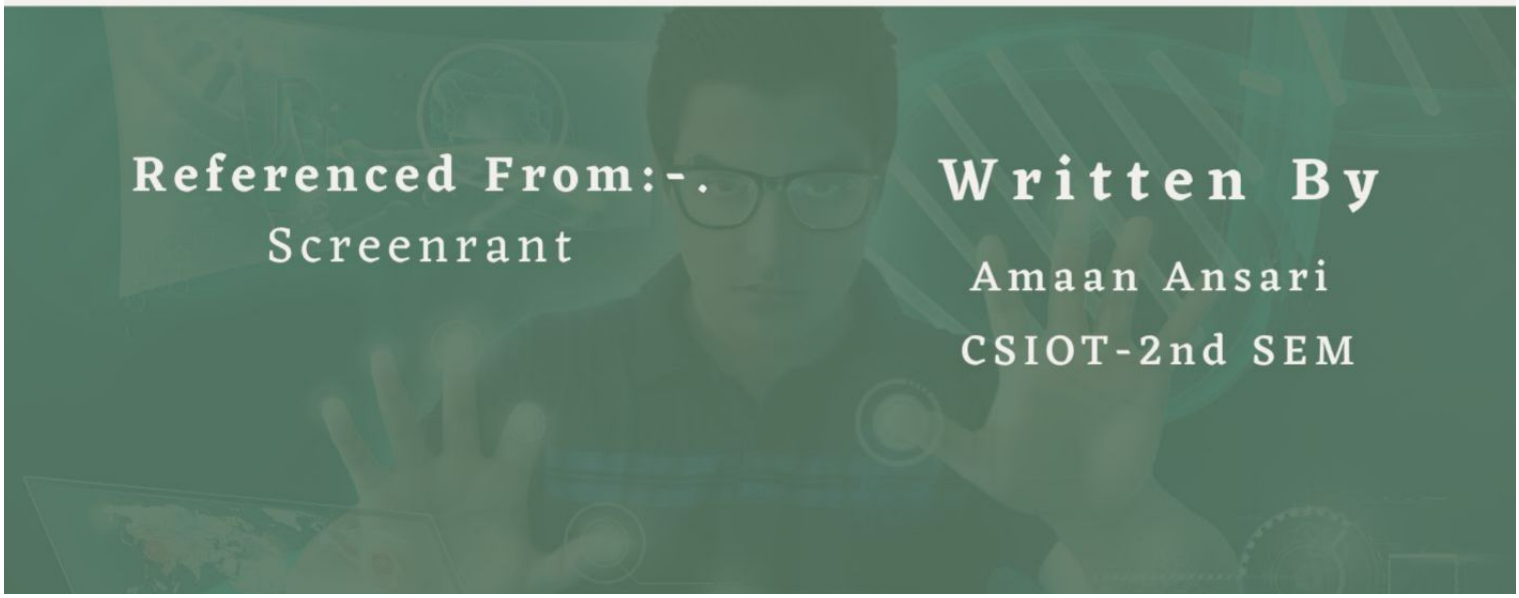
Referenced from:-

HINDUSTAN TIMES, DefenseNews.

WRITTEN BY : Palak Jaiswal (AIML)

Nvidia's GPUs

Nvidia uses AI tools in many aspects of chip development to make its future GPUs significantly better than the current-gen. World-renowned chipmaker Nvidia is using its powerful graphics cards to help engineers design the next generation of GPUs. Nvidia is currently at the forefront of GPU manufacturing and artificial intelligence. Nvidia DLSS and OptiX are two of the most popular AI technologies the company has developed recently. The first area is voltage drop mapping to determine where power is being used in the Nvidia GPU. Dally explained in the presentation that running it manually on CAD would take three hours, but with the help of an AI-powered GPU setup, the same could be done in about 18 minutes. The second area is noise testing to verify the operation of the circuit design, which is a routine process that AI handles. In the third area, the AI-powered GPU will test different chip layouts to determine the least cluttered design format. And finally, GPUs are also used to create new designs. Nvidia NVCell technology uses reinforcement learning to function as a standard auto-cell layout generator. Dally explains that every time the technology changes, such as the 7nm to 5nm node manufacturing process, these thousands of cells have to be redesigned using " a very complex set of design rules. " Nvidia NVCell can regenerate 92% of mobile libraries with seemingly no errors. For reference, it will take a team of 10 people working over a year to build a new cell technology library. The same can be done with the help of some powerful Nvidia GPUs in a few days, explains Dally. Of course, human intervention is still needed in all these areas, however, that looks futuristic. However, Nvidia AI-powered GPUs save the company a huge amount of time and create a better-designed chip. In addition to GPUs, Nvidia may soon break into the CPU manufacturing business, but that another story.



Referenced From:-.

Screenrant

Written By

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CSIOT-2nd SEM

NanoBOTS

THE SILVER BULLET IN MEDICINE

The last decade has seen the increasing use of artificial intelligence tools in nanotechnology research . Likewise, the convergence of AI with nanotechnology has the potential to affect the future of many technological breakthroughs that rely on computer architectures and data representations, such as bioengineering and neuroscience. Nanobots are another strand of technology that is gaining traction among technophiles and are being hailed as a crucial step toward transhumanism or cyborgs.

What are nanobots?

Nanobots are not the same as regular bots. A robot essentially means a machine that can perform tasks automatically while Nanobots are robots that carry out a very specific function and are ~50–100 nm wide.A major difference between nanobots from the popular conception of robots is that nanobots are built from DNA while conventional bots are coded in 1s and 0s. Artificial intelligence and biological inspiration were used to construct some of the most effective paradigms, such as neural networks and evolutionary algorithms. As nanobots can explore the body at a molecular and cellular level.

Scientists say that in the near future, tiny robots will be able to perform surgery and deliver drugs deep within the body. While nanotechnology offers a lot of promise in terms of preventing neurological diseases like Alzheimer's and cancer, AI combined with nanorobots can fill in the gaps in the immune system. Also Normally, drugs work through the entire body before they reach the disease-affected area. The medicine could be targeted to a specific spot using nanotechnology, making it significantly more effective and reducing the risk of side effects.

Referenced From:-

Science Daily
Wikipedia

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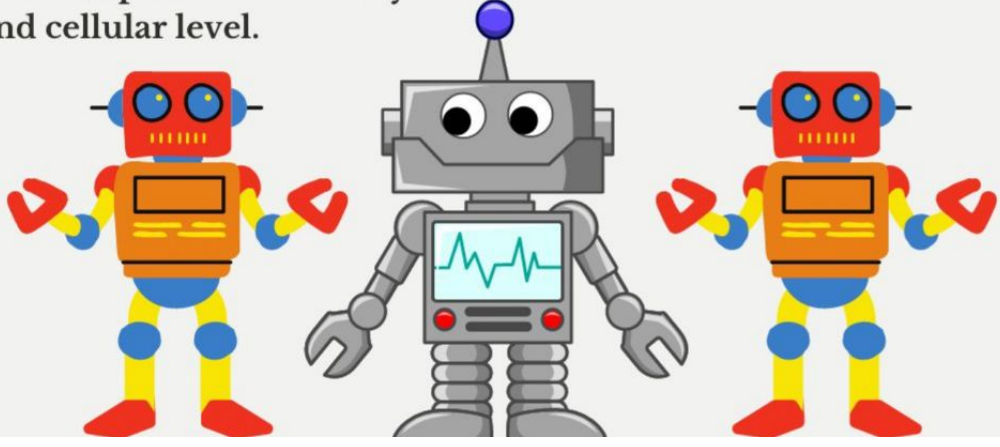

MILLIONS OF LENOVO LAPTOPS CONTAIN FIRMWARE-LEVEL VULNERABILITIES

Lenovo, One of the leading laptop computer brand in todays market, used by millions of people worldwide contain firmware-level vulnerabilities which gives the attacker access to put a malware in your laptop, That cannot be removed even after changing hard-drive and reinstalling Operating System. It stays on your BIOS. ESET announced that one of its researchers had discovered a three of vulnerabilities within Lenovo consumer laptops, two of the vulnerabilities (CVE-2021-3971 and CVE-2021-3972) involve Unified Extensible Firmware Interface (UEFI) drivers that were meant for use only during the manufacturing process but inadvertently ended up being part of the BIOS image. The third (CVE-2021-3970) is a memory corruption bug in a function for detecting and logging system errors. ESET reported these vulnerabilities to Lenovo in October 2021.Lenovo released BIOS updates on mid of April 2022. Martin Smolár, malware analyst at ESET, says "Exploitation of these vulnerabilities would allow attackers to directly disable crucial system security protections". While, the third vulnerability, CVE-2021-3970, allows arbitrary reads and writes from and into System Management RAM (SM RAM) — or memory that stores code with system management privileges. This gives attackers an opportunity to execute code with system management privileges on vulnerable systems, ESET said

REFERENCED FROM:-

The Wired

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CSIOT (2nd sem)

BOOK DAY EVENT

To commemorate the occasion of “International Engli sh Language Day” and “World Book Day” on Saturday, 23 rd Apr il, 2022 The Department of English is organizing “A Celebration of International English Language Day and World Book Day

Poetry Competition Winners

1. Hitansh Vyas (CSE, 4th sem)

And Anusha Satsangi (AIML, 2nd sem)

2. Soumya Tiwari (AIML, 4th sem)

3. Shubhi Rawat (IT, 4th sem)

Book Review Competition Winners

1. Anubhav Chatterjee (AIML, 2nd sem)

2. Aisha Iqbal Haqqani (CSE, 2nd sem)

3. Arni Khare (CSE, 6th sem)

BOUNDLESS CREATIONS

TANYA PAROCHI
CS-6 2ND SEM

SHIVANI BACHLE
EC-2 6TH SEM

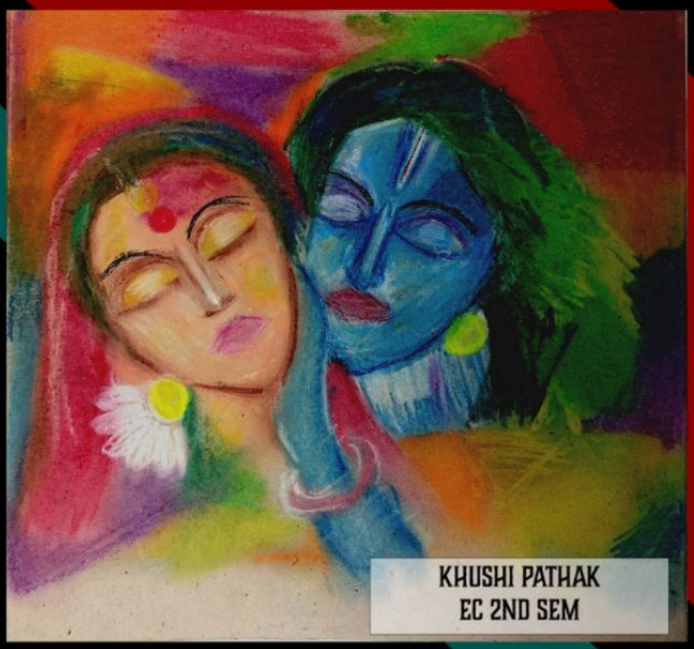
AKSHAT SHARMA
EC-1 2ND SEM

AAYUSH SONDHIYA
ME 6TH SEM

SHIVAM SHUKLA
CSE 2ND SEM

SHRAJAL SAHU
CSE 2ND SEM

BOUNDLESS CREATIONS



KHUSHI PATHAK
EC 2ND SEM

प्यार ही क्यों, चलो ना दोस्ती करते हैं..
आज फिर लडते झगड़ते हैं,
किसी बंधन में नहीं बंधते हैं,
खुलकर हर बात का इज़हार करते हैं,
प्यार ही क्यों, चलो ना दोस्ती करते हैं..

वाणी दीक्षित
EC 2ND SEM