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The Communique

Presidency School of Computer Science & Engineering
&
Presidency School of Information Science

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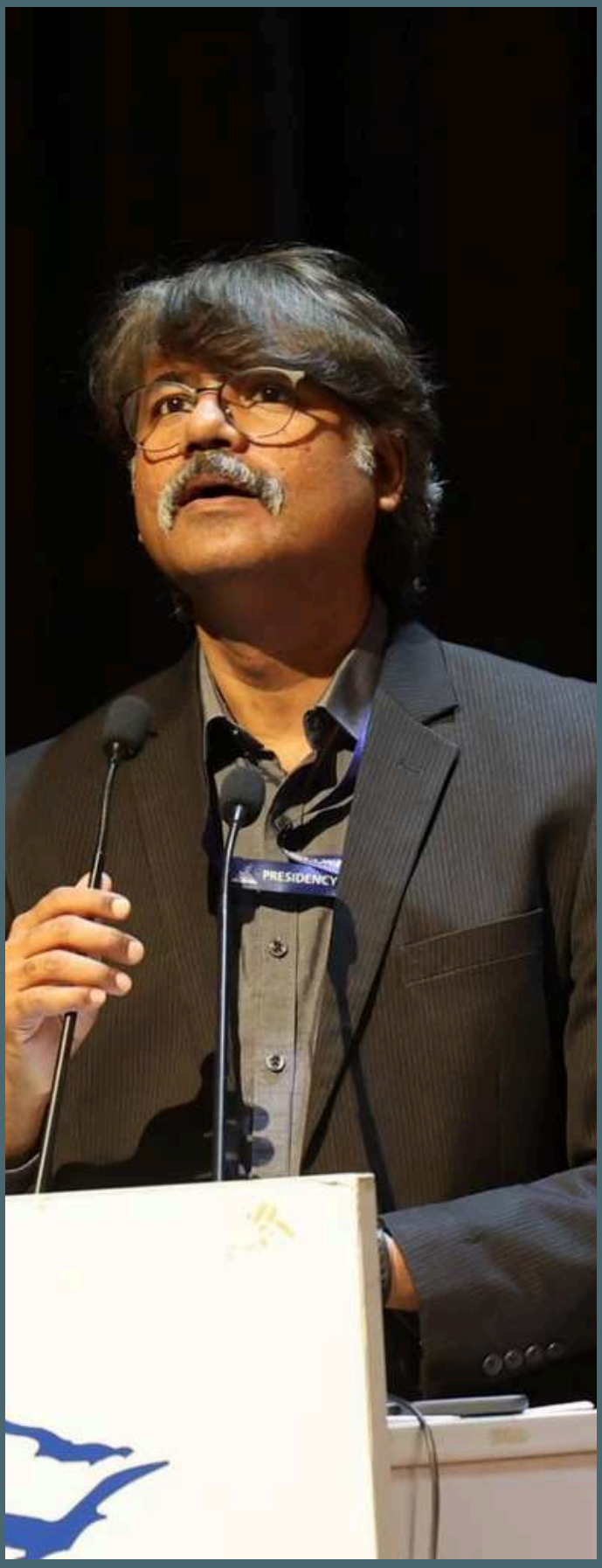
Issue Number 4

SUSTAINABILITY GOALS : POWERED BY CYBERSECURITY & BIG DATA

This Month in

THE COMMUNIQUE

enjoy!



FROM THE HELM

It is my honor to introduce this edition of The Communique, where we explore "Sustainability Goals Powered by Cybersecurity & Big Data"—a theme at the heart of humanity's survival. As climate crises escalate, technology's role evolves: cybersecurity and big data are no longer tools, but cornerstones of progress.

Cybersecurity now guards the foundations of our green revolution. Smart grids, AI-driven climate models, and IoT conservation systems are lifelines—yet vulnerable to sabotage. A single breach could unravel years of progress, empowering those who profit from Earth's exploitation. Protecting these systems is not optional; it is existential.

Big Data, meanwhile, fuels our fight. It transforms climate chaos into actionable insights—predicting deforestation, optimizing carbon capture, and exposing corporate greenwashing. But data without security is a ticking bomb. Quantum encryption, AI audits, and ethical frameworks are rising to shield these innovations, ensuring integrity in every byte.

This edition confronts urgent questions: How do we balance IoT-enabled conservation with privacy? Who governs environmental data ownership? And can we build digital trust as vital as clean air?

The stakes are clear: Sustainability cannot thrive without secure, intelligent systems. As we harness data to heal the planet, we must armor it against chaos.

Join us in reimagining sustainability as a digital imperative—where every algorithm is a shield, every dataset a blueprint for hope.

Explore. Innovate. Secure.

Best Regards,
Prof. (Dr.) Md. Sameeruddin Khan
B.E.-CSE, M.Tech. - CSE, Ph.D. - CSE, (PDF, City, Univ. of London), SMIEEE, MACM, MIAENG
Pro Vice Chancellor - Engineering,
Dean - Presidency School of CSE & Presidency School of IS
Presidency University, Bengaluru

MESSAGES FROM *the Editorial board*



At the intersection of survival and innovation lies this month's focus: Sustainability Goals Powered by Cybersecurity & Big Data. Climate urgency demands secure green tech—smart grids, AI models, IoT ecosystems—to thwart sabotage and data manipulation. Cybersecurity shields progress; Big Data fuels it, exposing greenwashing and optimizing carbon strategies. Yet, ethical questions loom: Who owns environmental data? How to balance surveillance with privacy?

The Editorial Board challenges leaders to unite digital resilience and sustainability, ensuring systems designed to heal the planet cannot be hijacked. The future hinges on trust—in data, code, and collaboration.

Join the revolution. —The Editorial Board

Sustainability Goals Powered by Cybersecurity & Big Data: A Women's Day 2025 Perspective

In today's interconnected world, sustainability is not optional—it's essential. Cybersecurity and big data stand at the forefront of this mission, offering powerful tools to protect and enhance our planet. But success lies not just in having these tools, but in how we use them.

Let's reflect on the story of the carrot, egg, and coffee bean—each faced the same boiling water (adversity) but responded differently:

- Carrot(Vulnerability): Symbolizes organizations weakened by poor cybersecurity, compromising sustainability efforts.
- Egg(Defensive Posture): Represents those with strong defenses but no innovation—secure, yet stagnant.
- Coffee Bean(Transformative Agency): Transforms the environment—just like forward-thinking organizations that blend cybersecurity and big data to drive impactful, sustainable change.

The Synergy:

- Cybersecurity protects vital sustainability data and infrastructure, building trust and resilience.
- Big Data offers insights, drives innovation, and enables smarter environmental decisions.

Women's Day 2025: A Call to Action

This Women's Day, let's empower more women to be coffee beans—change-makers in cybersecurity and big data. We commit to:

- Closing the Gender Gap in STEM through mentorship, scholarships, and outreach.
- Empowering Women Leaders in sustainability and tech.
- Promoting Digital Literacy, equipping women with skills to thrive in the digital age.
- Celebrating Women's Achievements in cybersecurity, big data, and green innovation.
- Fostering Collaboration through supportive networks and inclusive platforms.

Together, by uplifting women and leveraging technology with intention, we can build a more equitable and sustainable future.

Dr. Robin Rohit Vincentt
Professor & HoD, PSCS
Presidency University, Bangalore.

Sustainability Goals Powered by Big Data: Driving a Greener Future

In today's world, sustainability is essential. Big data is transforming how governments, businesses, and researchers manage resources, reduce emissions, and make real-time, informed decisions for a better planet.

Big Data in Action

- **Tracking SDGs**

Big data bridges gaps in monitoring the UN Sustainable Development Goals through satellite imagery, IoT sensors, and AI analytics. Platforms like Sustain Bench extract insights from satellite images and social media to inform policy.

- Global Highlights

USA: Leading in AI-driven SDG tracking with 2,700+ data centers.
China: A $10B industry focused on environment and economy.
India: Emerging as a leader with grassroots impact via DigiGaon, Smart Cities, and digital agriculture initiatives.

India vs. Developed Nations

Despite limited resources, India's cost-effective, open-source, and inclusive strategies are driving impactful results:

- Smart Cities: India's 100 Smart Cities reduced energy waste by 25%, outperforming the U.S. (20%) and China (18%).
- Agriculture: AI-driven farming boosted yields by 30%—higher than both the U.S. (22%) and China (25%).
- Healthcare: CoWIN and Ayushman Bharat showcase large-scale, AI-based health data systems.
- Disaster Management: AI models like ICVA cut response times by 40% using open-source tools.

The Road Ahead

India is proving that big data, when made accessible and inclusive, can fuel sustainable development—globally. As AI and data tools evolve, India's model offers a blueprint for affordable, scalable, and grassroots-driven solutions.

Dr. Pravith Raja
Professor & HOD, PSCS
Presidency University, Bangalore.

The Ghibli Trend: Sustainability and Cybersecurity Considerations

The Ghibli Trend uses artificial intelligence (AI) and advanced filtering techniques to transform ordinary images and videos into scenes reminiscent of Studio Ghibli films. This trend has become immensely popular on platforms like TikTok, Instagram, and Pinterest, captivating audiences with its warm, vibrant aesthetics and whimsical landscapes. Users seek to evoke nostalgia, creating tranquil and dreamlike experiences that offer an appealing escape from everyday stresses.

Popularity and Appeal

The appeal of Ghibli-inspired visuals stems from their gentle and ethereal beauty, transforming mundane scenes into enchanting, magical depictions. This nostalgic trend resonates deeply with those who grew up watching Studio Ghibli films, invoking cherished childhood memories of simpler, carefree times. Moreover, the visually appealing nature of these images significantly boosts user engagement and visibility on social media platforms.

Challenges and Risks

Despite its popularity, the Ghibli Trend presents considerable cybersecurity and ethical challenges. The widespread sharing of images for AI-driven enhancements poses risks such as deepfake manipulation, digital identity theft, and unauthorized data exploitation. Users inadvertently provide high-quality data to large AI language models, potentially jeopardizing personal privacy.

Furthermore, Hayao Miyazaki, the renowned founder of Studio Ghibli, has expressed strong reservations regarding AI-generated art, emphasizing the importance of genuine human emotion and artistic integrity—qualities that he believes are diminished by AI-driven creativity.

Future Directions

To engage responsibly with the Ghibli Trend, individuals must prioritize data security, choose secure platforms, and uphold transparency and ethical practices. Balancing creative expression with cybersecurity awareness ensures that digital innovation supports sustainable development and genuine creativity.

Dr. Sampath A K
Professor- PSCS
Presidency University, Bangalore

Think You're Safe?
6 Cybersecurity Myths Putting You at Risk

Myth 1: Small companies aren't targets.

Fact: Size doesn't matter to cyber attackers. SMEs often lack strong defenses, making them ideal low-hanging fruit for automated attacks and ransomware.

Myth 2: Strong passwords are enough

Fact: Passwords are only the beginning. Layered security—like Two-Factor Authentication (2FA), data masking, and access controls—adds essential protection against breaches.

Myth 3: Only certain industries are vulnerable.

Fact: Every company holds data worth stealing—emails, phone numbers, or payment info. No sector is immune from cyber threats.

Myth 4: Threats come only from the outside.

Fact: Insider threats—whether malicious or accidental—account for a significant percentage of breaches. IBM's 2021 report found internal breaches cost organizations an average of $4.61 million.

Myth 5: Only IT and Legal should respond to data breaches

Fact: Communication is key. Internal communication and PR teams must be looped in early to manage stakeholder trust and public response.

Myth 6: Anti-virus software is enough.

Fact: Basic software helps—but alone, it's insufficient. A comprehensive cybersecurity strategy includes intrusion detection, access management, and employee training.

GUARDIANS OF THE GREEN GRID: A BATTLE FOR TOMORROW

"GUARDIANS OF THE GREEN GRID"

In 2045, the sustainable city of Neotopia thrived on EcoMesh—a big data network optimizing energy, climate, and carbon tracking. When a cyberattack corrupted its sensors, false data began destabilizing renewable systems. Dr. Lena Voss, the lead data scientist, and Marcus Kane, cybersecurity chief, uncovered a plot by Black Verdant, a group masquerading as eco-rebels but funded by fossil fuel interests. Their malware targeted IoT devices, threatening to collapse the grid.

Lena rerouted EcoMesh to a backup neural network, filtering poisoned data, while Marcus deployed a counterworm to trace the hackers to an oil rig. The strike succeeded, neutralizing the attack. At dawn, Neotopia's citizens remained oblivious, but Lena and Marcus knew the truth: sustainability's future hinges on digital trust. Without secure systems, green innovations become vulnerabilities.

The Message:
Big data and AI drive climate solutions, but cybersecurity is their lifeline. As we build smarter grids and cities, we must ensure these tools cannot be weaponized. True sustainability marries innovation with resilience—protecting progress from those clinging to the past.

The Editorial Board

EVOSENTINEL 🌱: SECURING SMART ECOSYSTEMS FOR A SUSTAINABLE FUTURE

As climate-focused technologies like smart hospitals, green factories, and energy grids expand, securing these IoT systems becomes vital. EvoSentinel is an AI-powered cybersecurity framework designed to protect these digital ecosystems while supporting sustainability goals.

How EvoSentinel Supports Green Tech

Genetic AI Engine

This layer evolves over time to block new threats using mutation, crossover, and selection. For example, it can learn to detect and prevent unusual activity in patient monitors or energy sensors, ensuring safe and reliable operation of climate-critical devices.

Attention Economics Module

By grouping devices into high, medium, and low priority, this layer focuses resources where needed most—saving energy and boosting efficiency. For instance, life-saving devices get top attention, while low-risk systems like HVAC are checked less often, reducing energy use.

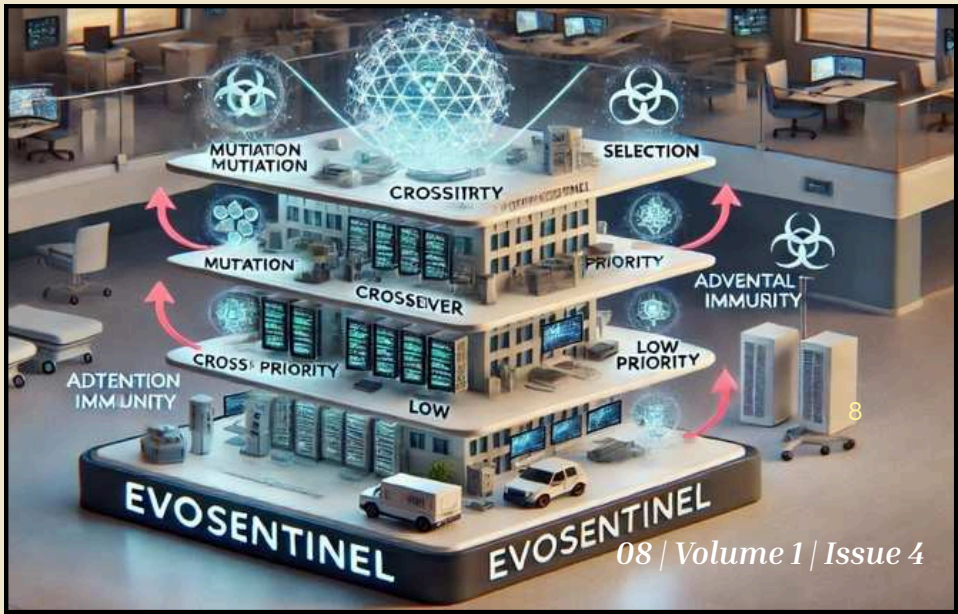
Adversarial Immunity Layer

This layer defends against smart cyberattacks using advanced techniques like FGSM, PGD, and GANs. It helps prevent data manipulation that could affect sustainability reporting or green system performance.

Why It Matters

In a world driven by climate urgency, EvoSentinel ensures smart infrastructure remains secure, efficient, and trustworthy. It shields against cyber threats while enabling reliable data collection, efficient energy use, and resilient smart systems—all key pillars of a sustainable digital future.

Ms. Soumya
Assistant Professor, PSCS
Presidency University, Bangalore



Impact of Big Data on Environmental Decision-Making

Big data has a significant impact on environmental decision-making by improving the accuracy, efficiency, and effectiveness of policies and actions aimed at sustainability. Here are some key ways in which big data is transforming environmental decision-making:

1. Improved Environmental Monitoring
- Sensors, satellites, and IoT devices collect real-time data on air quality, water pollution, deforestation, and climate patterns.
- Governments and organizations can detect changes in environmental conditions more quickly and respond effectively.

2. Better Climate Change Analysis
- Big data helps in analyzing climate trends, predicting extreme weather events, and assessing the long-term impacts of global warming.
- Advanced machine learning models use large datasets to improve climate forecasting.

3. Enhanced Natural Resource Management
- Smart data analytics assist in optimizing the use of water, energy, and agricultural resources.
- Big data supports precision agriculture, reducing waste and improving sustainability.

4. Early Warning Systems & Disaster Management
- AI-driven big data models predict natural disasters like floods, hurricanes, and wildfires with greater accuracy.
- Governments and agencies can prepare evacuation plans and allocate resources efficiently.

5. Sustainable Urban Planning
- Data-driven insights help design smart cities with optimized energy consumption, waste management, and transportation systems.
- Traffic and pollution data enable better urban mobility planning.

6. Policy and Decision Support
- Data analytics inform policymakers on the environmental impact of industrial activities and regulations.
- Evidence-based decisions help in enforcing stricter environmental policies.

7. Corporate Sustainability & ESG Compliance
- Businesses use big data to track carbon footprints, supply chain sustainability, and environmental compliance.
- Investors and stakeholders analyze big data for Environmental, Social, and Governance (ESG) ratings.

8. Public Awareness & Engagement
- Open data platforms allow citizens and researchers to access environmental information.
- Social media analytics provide insights into public sentiment regarding environmental issues.

Dr. Hasan Hussain Shahul Hameed
Professor-PSIS
Presidency University, Bangalore.

Innovative Trends in Sustainability Powered by Cybersecurity & Big Data

The urgency of climate change, coupled with rapid advancements in cybersecurity and data analytics, has enabled new strategies for achieving sustainability goals.

Key innovations include:

🔹 Edge Computing – Processes environmental data close to the source, reducing latency and improving real-time responses. It supports low-power sensors and on-device anomaly detection for faster environmental monitoring.

🔹 Blockchain – Creates tamper-proof records for sustainability reporting, combats greenwashing, and supports carbon credit verification using energy-efficient consensus mechanisms.

🔹 Quantum-Resistant Cryptography – Ensures long-term security of environmental data by safeguarding against future quantum threats.

🔹 Federated Learning – Enables privacy-preserving data analysis across devices without sharing raw data, crucial for energy use analytics and cross-organizational collaboration.

Secure Sustainability Frameworks

🔒 Secure environmental monitoring is achieved through multi-layered architectures using lightweight encryption, trusted hardware, and secure communication protocols.

📊 A federated analytics pipeline processes diverse sustainability data (sensor, geospatial, text) using knowledge graphs and explainable AI to enhance resource efficiency.

Dr. Harish Kumar K S
Assistant Professor , PSIS
Presidency University, Bangalore.

Real-World Impact

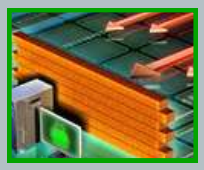
- Smart grids saw a 34% drop in cyberattacks and an 8.7% cut in carbon intensity.
- Urban transport saved 21% in fuel through real-time route optimization.
- Agricultural chains reduced water use by 31% and false sustainability claims by 94%.

Conclusion:

Integrating cybersecurity and big data offers a scalable, secure path to global sustainability. These innovations promise impactful change across energy, agriculture, and urban systems.

PATENTS IN CYBERSECURITY: SAFEGUARDING INNOVATIONS IN THE DIGITAL AGE

In an era where cyber threats are escalating, cybersecurity innovations play a crucial role in protecting sensitive information. To safeguard these innovations, patents offer legal protection to inventors and organizations, ensuring that their technological advancements remain exclusive. This article explores the importance of patents in cybersecurity, notable patents, and recent trends in this dynamic field.




Notable Cybersecurity Patents

Over the years, several groundbreaking patents have shaped the cybersecurity landscape. Some notable ones include:

1. *RSA Encryption Algorithm (Patent No. 4,405,829) – A cornerstone in cryptography, this algorithm revolutionized secure communications.*
2. *Firewall Technology (Patent No. 5,835,726) – Introduced a method for filtering network traffic, crucial for network security.*
3. *Two-Factor Authentication (Patent No. 8,301,897) – A widely used security mechanism that enhances identity verification.*
4. *Intrusion Detection System (Patent No. 6,119,236) – A system for detecting unauthorized access attempts and cyber threats.*

Importance of Cybersecurity Patents

Patents in cybersecurity help in:

- Encouraging innovation by granting exclusive rights to inventors.
- Preventing unauthorized use or replication of security technologies.
- Attracting investments by increasing the commercial value of innovations.
- Promoting transparency and knowledge sharing in the tech community.

Recent Trends in Cybersecurity Patents

The cybersecurity landscape is evolving, leading to innovative patent filings in areas such as:

- Artificial Intelligence (AI) in Threat Detection: AI-driven security systems that predict and mitigate cyber threats.
- Blockchain for Security: Patents related to using blockchain for secure data transactions and authentication.
- Quantum Cryptography: Innovations aimed at countering quantum computing threats.
- Zero-Trust Security Models: Patents that focus on continuous verification rather than traditional perimeter security.

Challenges in Cybersecurity Patents

- Despite their benefits, patents in cybersecurity face certain challenges:
- Fast-Paced Technological Changes: Cyber threats evolve rapidly, making some patented technologies obsolete quickly.
- Patent Infringement Disputes: Legal conflicts over intellectual property rights can be complex and time-consuming.
- Global Compliance Issues: Different countries have varying patent laws, making international protection difficult.

Mr. Muthuraju V
Assistant Professor-PSCS
Presidency University, Bangalore.

CYBERSECURITY & BIG DATA: THE TECH POWER BEHIND SUSTAINABILITY GOALS

In the race to tackle climate change, technology is stepping up. The fusion of big data analytics and cutting-edge cybersecurity is driving powerful innovations that help us monitor, protect, and optimize our planet like never before.

What's New and What's Next?

🌍 Edge Computing brings real-time environmental monitoring to remote locations, processing data on-site for quicker, greener decisions.

🔗 Blockchain ensures transparency in sustainability reporting—no more greenwashing!

🔐 Quantum-Resistant Cryptography is future-proofing environmental data against next-gen cyber threats.

🤝 Federated Learning allows multiple organizations to collaborate on sustainability goals without compromising privacy.

Challenges? Solved.

Smart solutions like secure sensor networks and explainable AI models are tackling threats from vulnerable IoT devices to messy, unstructured data. These innovations are already saving energy, water, and even lives—while making our systems more resilient and efficient.

Real Impact. Real Results.

🚆 Urban transport systems are cutting fuel use by 21% thanks to AI and dynamic routing.

⚡ Smart grids are lowering carbon footprints while boosting energy forecasting accuracy.

🌾 Agriculture is using blockchain and IoT to slash water use and food waste.

The Bottom Line

By integrating cybersecurity and big data, we're not just making systems smarter—we're making sustainability secure, scalable, and successful.

Dr. Kimmi Kumari
Assistant Professor - Senior Scale, PSIS
Presidency University, Bangalore

Sunita Williams' Historic Return: A Powerful Tribute to Women's Day

Sunita Williams' journey aligns with the theme of Women's Day 2025: "Inspire Inclusion." Her achievements remind us that gender should never be a barrier in any field, especially in space exploration—a domain once dominated by men.

A Mission of Strength, Resilience and Breaking Barriers

As the world celebrated International Women's Day on March 8, 2025, astronaut Sunita Williams' return to Earth on March 19 serves as a powerful symbol of women's resilience, leadership, and contributions to science and space exploration. Her mission, initially planned for a few days, turned into an unexpected nine-month journey aboard the ISS, proving once again that women continue to break barriers and redefine possibilities in STEM fields.

Throughout history, women like Valentina Tereshkova (first woman in space, 1963), Sally Ride (first American woman in space, 1983), and Kalpana Chawla (first Indian woman in space, 1997) have paved the way for future generations. Williams, with more than 322 days in space across multiple missions, continues this legacy.

NASA astronaut Sunita Williams is set to return to Earth on March 19, 2025, after spending over eight months aboard the International Space Station (ISS). Williams, along with fellow astronaut Butch Wilmore, will board the SpaceX Crew Dragon spacecraft for their journey home. Their return follows the arrival of the Crew-10 mission, which will take over operations on the ISS
Williams' mission has been particularly significant, as she played a key role in scientific experiments, including studies on biomanufacturing using bacteria and yeast samples. This mission also marked another milestone in her illustrious career, having already completed multiple spacewalks and accumulated extensive experience in space travel.

"*To all the young girls dreaming of reaching for the stars—whether in science, leadership, or any field—Sunita Williams' journey is proof that no challenge is too great. Her resilience in space reminds us that women belong everywhere decisions are made, even in the vastness of space itself. Keep pushing boundaries, because the future is limitless.*"

Looking Ahead

With space missions becoming more frequent and inclusive, Williams' legacy will continue to inspire young girls to dream big and reach for the stars. Her return to Earth is not just the end of a mission—it's a new beginning for the future of women in space

"*I don't go to space to prove anything but to explore.*" — *Sunita Williams*

Ms. Josephine. R
Assistant Professor-PSCS
Presidency University, Bangalore.

Achievements

SCALING NEW HEIGHTS: FROM SCHOLAR TO DOCTOR!

Dr. Sridevi S successfully completed her Ph.D. on "**Designing QoS-Aware Protocols towards Efficient Mobility Management in 5G**" from **Presidency University, Bengaluru** on **January 16th 2025,** under the guidance of **Dr Jacob Augustine**. The study focuses on developing advanced quality-of-service (QoS)-aware communication protocols to address the challenges of seamless mobility and efficient resource management in 5G networks. Her work makes a significant contribution to next-generation wireless communication by enhancing data transmission reliability, reducing latency, and optimizing network performance, particularly in high-mobility environments.

Dr. Ayesha Taranum successfully completed her Ph.D. on **"Analysis and Identification of Skin Diseases in Canines using Deep Learning Algorithm"** under the guidance of **Dr. Jyoti Metan** from **Visvesvaraya Technological University** on **21st January 2025.** Her research focuses on enhancing veterinary diagnostics through advanced texture pattern recognition and deep learning, enabling accurate classification of canine skin diseases. The study significantly contributes to big data processing and predictive healthcare analytics in veterinary science.

Dr. Naiwrita Borah successfully completed her Ph.D. on "**Document Retrieval for Assamese Scripts using CBIR Techniques**" under the guidance of **Dr. Udayan Baruah and Dr. Barnali Dey** from Sikkim Manipal Institute of Technology, **Sikkim Manipal University**, on **15th March 2025**. Her research focuses on content-based image retrieval (CBIR) for printed Assamese scripts, integrating deep learning-based feature extraction and classification techniques. The study contributes significantly to the fields of regional language computing, digital archiving, and intelligent document analysis, promoting technological inclusivity in underrepresented languages.

RESEARCH FRONTIERS

Mr. Pakruddin B
Assistant Professor

Dr. Akshatha Y
Asst. Professor, Selection Grade

Mr. Praveen Pawaskar
Assistant Professor

Our researchers have published a comprehensive book titled A Practical Guide to Mastering Data Visualization Tools and Techniques, offering readers an in-depth journey from foundational principles to advanced data visualization practices."

Research Frontiers

Dr. Pravinth Raja
Professor & HOD PSCS

Dr. S. Pravinth Raja published groundbreaking research on "An efficient and resilience linear prefix approach for mining maximal frequent itemset using clustering" in Journal of Safety Science and Resilience.

Dr. Selvaraj Poornima
Assistant Professor

Dr. S. Poornima presented session titled "AI and the Evolution of Data Management: Strategies for the Next Generation" at the NIMHANS Convention Center in Bengaluru.

Ms. Neha Arora
Assistant Professor

Ms. Neha Arora published groundbreaking research on "Detecting Android Malware: Employing Mobile Devices to Improve Procedures for Inquiry-Based Learning" in scopus indexed journal.

Dr.Zafar Ali Khan N
Professor & HOD PSCS

Ms. Shreeraksha R Adiga
B. Tech CSE (AIML)

Ms. Hida Fathima P H
B. Tech CSE (AIML)

Mr. Navaneeth A D
B. Tech CSE (AIML)

Our students presented a research paper titled 'IoT-Enabled Wearable Sensing Device for the Safety of Miners' at the 4th International Conference on Intelligent Systems & Sustainable Computing under the guidance of Dr. Zafar Ali Khan N.

Research Frontiers

B. V. Nahush

Mr. Pakruddin. B
Assistant Professor, PSCS

Chithra P

B. M. Vineel Eshwar

Students under the guidance of Mr. Pakruddin. B presented their groundbreaking research on "Multiclass Turmeric Disease Image Classification Leveraging Advanced CNN Models" at IEEE INOACCC-2025, held at SVIT, Bengaluru.

Patnam Mahesh S.

Ms. Smitha S P and Dr. Harishkumar K S presented their groundbreaking research "A Comprehensive Survey on the Evolution and Deep Learning Techniques in Recommender Systems" at IC3C-2025, CSI College of Engineering, Ooty.

Dr. Harish Kumar
Assistant Professor -Senior Scale
PSIS

Ms. Smitha S P
Assistant Professor-PSCS

DEPT NEWS

Omega Coding Club Ignites a New Semester With a Vibrant Orientation Event

The Omega Coding Club successfully hosted its Orientation on March 28, 2025, setting the stage for an exciting semester ahead. The event introduced new members to the club's mission, past achievements, and upcoming initiatives. Key highlights included inspiring addresses by esteemed faculty, a report on past activities, and a prize distribution ceremony celebrating student excellence. With vibrant participation and faculty support, the session marked a promising start towards nurturing a dynamic coding culture on campus.

Workshop Empowers Faculty to Integrate Fintech and AI into Curriculum

A workshop on "Enhancing Curriculum Contents by Integrating Fintech and AI Technologies" was conducted by PSCS AND PSIS in collaboration with SIGMA. Experts from Paytm, Mr. Manish Taneja and Mr. Aayush Suri, shared valuable insights on incorporating Fintech and AI into academic programs. The session aimed to help faculty align curriculum with industry needs and foster future-ready learning. The event was convened by Dr. Zafar Ali Khan N and coordinated by Ms. Smitha S P.

Creovators Club Inaugurated with a Spark of Innovation and Inspiration

The inauguration of the Creovators Club—a hub for innovation and collaboration—was held on March 28, 2025, at the University Auditorium. Graced by distinguished guests and dignitaries, the event featured inspiring speeches by Dr. Mahalakshmi R and Dr. Madhan Kumar Srinivasan, a noted innovator with over 100 patents. Symbolic activities like lamp lighting and a passionate guest talk energized the audience. The event celebrated creativity, entrepreneurship, and student potential, marking a vibrant beginning for the club's journey.

DEPT NEWS

Mastering Python for Interviews: A Step Towards Career Success

On April II, 2025, the session "Decoding Python: Ace Your Interview Student Series" was conducted at LGLOI, exclusively for students aiming to strengthen their interview readiness. This event was led by Mrs. Yogeetha B R, Assistant Professor, SoCSE, the session focused on core Python concepts, commonly asked interview questions, and smart coding techniques. It provided students with hands-on guidance and valuable tips to approach technical interviews with clarity and confidence. The event was successfully coordinated by Dr. Gopal K Shyam, Ms. Amirtha Preeya V, and Dr. Smitha Patil.

Exploring the Future of Virtual World: A Deep Dive into Meta's Vision for AI in the Metaverse

On March 24, 2025, the Metaverse Society Club of the School of Information Science organized a thought-provoking webinar titled "AI in the Metaverse: Meta's Vision." The session, conducted by Dr. Anand Prakash, Associate Professor at Presidency University. He provided deep insights into Meta's ambitions of integrating AI to build immersive, intelligent, and personalized virtual worlds. Key takeaways included advancements in AI-driven avatars, generative content, natural language processing, and virtual workspace innovations. The event was coordinated by Ms. Kumari K.

From Tier 3 to JP Morgan – A Journey of Grit and Code

On April 8, 2025, the oNe-O-oNe Club at Presidency University hosted a seminar titled "No Pedigree, No Problem: Her Tier 3 to JP Morgan Story + Live LeetCode Bootcamp." Open to students across disciplines, the event shared an inspiring story of perseverance and success. The live bootcamp focused on coding techniques, data structures, and problem-solving strategies to boost technical interview readiness. With practical insights and motivation, the session empowered students to aim for top tech careers. The event was coordinated by Ms. Rakheeba Taseen.

DEPT NEWS

SheLeads Hackathon: Building the Future inspired students to explore ideas and develop innovative solutions

SheLeads Hackathon: Building the Future empowered students to ideate and innovate across three dynamic tracks—Technology & Innovation, Creative Industries & Media, and Business & Legal Strategy. The event encouraged real-world problem solving, teamwork, and creative expression. Participants gained hands-on experience with cutting-edge tools and concepts, preparing them for future roles in tech, media, and business. A highlight was the session on AI-Powered Career Planning by Ms. Mitali Bhargava from Google, which offered invaluable insights into shaping future-ready career paths. the event was convened by Dr. Zafar Ali Khan and coordinated by Ms. Josephine R.

Harnessing the Cloud: Azure AI Illuminates the Future of Intelligent Innovation

The School of Computer Science hosted an enlightening online session titled "Unlocking the Power of Azure AI Cloud Solutions for the Modern Era" on April 4, 2025. Mr. SivaBalan N, a seasoned Data Integration Specialist at NTT DATA, shared his vast industry and academic expertise, inspiring students with insights on leveraging Azure AI for real-world applications. The session emphasized the potential of cloud-based AI to address modern technological challenges, enhance innovation, and empower future engineers. The event was coordinated by Ms. Smitha S P and Ms. Josephine R.

AI Meets Athletics: Students Dive into the Future of Sports Tech

On March I4, 2025, pre-final year CSE students participated in an engaging offline session titled "Exploring AI in Sports: A Peer-to-Peer Technical Discussion." Mr. Manoj C Acharya, a talented AI and Robotics student, shared his real-world experiences and insights on the role of AI in performance tracking and sports analytics. The session encouraged collaborative learning and highlighted emerging opportunities at the intersection of AI and sports. The event was organized under the guidance of Club Convener Dr. Zafar Ali Khan and Club Coordinator Ms. Smitha S P.

SUSTAINABILITY GOALS POWERED BY CYBER SECURITY AND BIG DATA

As the world transitions to a data-driven sustainability model, businesses play a crucial role in developing eco-friendly technologies, managing climate data, securing renewable energy grids, and optimizing sustainable supply chains. However, a growing cyber threat—Store Now, Decrypt Later (SNDL)—could undermine these efforts. In this attack model, bad actors steal encrypted data today, anticipating that future quantum computers will be powerful enough to decrypt and exploit it. This threatens clean energy innovations, financial transactions, and critical infrastructure, posing significant risks to global sustainability initiatives.

To counter this, companies and governments should move to quantum-safe security in response to this security challenge. Post-Quantum Cryptography (PQC), a newer cryptographic method is used to encrypt the data and protect them from the strongest quantum computers for a period of time. With Quantum Key Distribution (QKD) you may additionally enhance the security properties in sustainability communications where the main idea is formed by the principles of quantum mechanics, which allow the creation of codes that won't be broken, thus protecting real-time sustainability communications. A hybrid approach that combines existing encryption with a new set of quantum-resistant algorithms can help organizations to gradually implement quantum cybersecurity without disrupting operations. Industries can act now to ensure that their data will be secure and the trust in all their green technological initiatives will be maintained in the quantum era.

Ms. C Suravi
20231IST0056 - 4IST-01, PSCS
Presidency University,Bangalore.

The Future of Cybersecurity: What's Next?

In 2025, cybersecurity continues to grow as a crucial area of focus for businesses, governments, and individuals alike. With technology evolving quickly, cyber threats are also becoming more complex and harder to stop. This write-up covers some of the biggest upcoming trends in cybersecurity and also talks about recent news and developments that are shaping the industry right now.

Cybersecurity is evolving fast. Staying informed, adopting smarter tools, and protecting digital identities will be key to staying safe.

🚨 *Rising Threats*

Nation-State Attacks: State-sponsored hackers now target infrastructure, making global cooperation essential.

Supply Chain Attacks: Hackers exploit third-party vendors to infiltrate primary targets.

🤖 *AI on Both Sides*

AI helps detect threats faster, but hackers use it too—to create stealthy, adaptive malware. It's a cyber arms race.

🛡️ *Smarter Defenses*

Identity-First Security: MFA and user authentication are now the frontline.

Ransomware Evolution: Criminals now threaten to leak data if unpaid. Strong backups and quick response plans are key.

🧠 *Securing AI Itself*

AI systems can be tricked or corrupted if their data is tampered with. Securing models and inputs is a growing priority.

📜 *Policy & Privacy*

Data laws are tightening globally. Companies must now localize data storage and comply with new privacy standards.

Cyber Updates (2025 Highlights)

- *Australian pension funds hacked due to weak passwords.*
- *Microsoft adds AI-powered threat detection to its security tools.*
- *FBI warns of 'Fast Flux' attacks—IPs rapidly changing to avoid tracking.*
- *Ransomware gangs shift tactics, focusing on data theft and blackmail.*

Mr. Robin Ponnanna K. M
20241CCS0106 -2BES15
PSCS-(Cyber Security)
Hackeye Student Coordinator

SHAPING FUTURE INNOVATORS THROUGH THE UNIVERSITY RESEARCH EXPERIENCE COURSE

In a move to empower students with hands-on research skills, Presidency University introduced the University Research Experience elective, led by Dr. Zafar Ali Khan N, Professor & HoD - CAI, ISE, PSCS. This six-month course enables students to pursue independent research projects under faculty mentorship, bridging academic learning with real-world problem-solving. Successful completion also offers the added benefit of skipping an open elective in the next semester. Six students from the 6CAI section recently completed this transformative course. Mr. Jahnu Tanai Kumar Hindupur developed a "Library Gate Register Application Software with Koha Integration," now deployed across all university libraries. Ms. Chandreyi Avijit Ghosh created a face-recognition-based attendance system to ensure secure and error-free monitoring. Ms. Shreeraksha R Adiga applied CNNs to improve bone cancer detection from X-rays, enhancing diagnostic reliability. Agricultural innovations included Ms. Keerthana B's disease detection in chili plants and Ms. Sarah Farooqui's work on guava leaf disease diagnosis—both using deep learning to aid farmers. Meanwhile, Ms. Divya V designed a system for early detection of Autism Spectrum Disorder through video-based posture analysis, offering timely intervention tools. The course exemplifies how student-led research can drive impactful solutions across domains. With strong mentorship and a focus on real-world application, the University Research Experience course continues to nurture the next generation of innovators.

By Jahnu Tanai Kumar Hindupur, Chandreyi Avijit Ghosh, Shreeraksha R Adiga, Keerthana B, Sarah Farooqui, Divya V

Crack the Code!

PLAY

CHALLENGE 1: CAESAR CIPHER PUZZLE

START

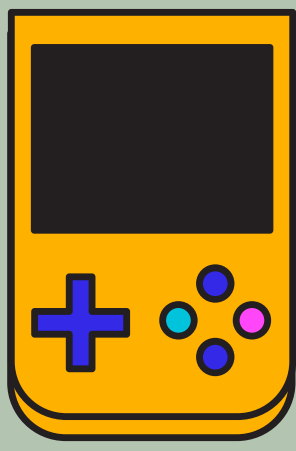
The following sentence is encrypted using Caesar Cipher with a shift of +3. Can you decode it?

Khoor Fzppxqltxh Uhghhuv!

Hint: Shift each letter back by 3 places in the alphabet.

CHALLENGE 2: FIND THE ORIGINAL WORD (HASH GAME)

Prompt:
We took a 5-letter word and hashed it using a simple sum of its ASCII values. The sum is 500. Can you guess the word?
Rules:
Each letter's ASCII value is added together.
Try to find a 5-letter English word where the sum of ASCII values = 500.
(Example: "apple" → 97+112+112+108+101 = 530)



CHALLENGE 3: REVERSE MESSAGE PUZZLE

Prompt:
We reversed a sentence and added random capitalizations. Can you fix it?

!eRtAc eH f0 ,loohcS ytisrevinU ycnediserP tA

Cybersecurity & Big Data Glossary

Hadoop Distributed File System (HDFS).

The core of Hadoop's storage system, designed to handle large volumes of data across distributed servers. Must be secured to avoid unauthorized data access or corruption.

Phishing

A social engineering technique where attackers trick users into revealing sensitive information, like login credentials, often used as an entry point to larger data systems

Data Masking

A technique to hide original data with modified content. It's used in testing and training environments to maintain confidentiality in big data.

Intrusion Detection System (IDS)

Monitors networks or systems for malicious activities. Can be used alongside big data tools to analyze traffic patterns and detect anomalies.

Anonymization

The process of removing personal identifiers from datasets. It's a key requirement in data privacy laws like GDPR, especially when analyzing user data.

Ransomware

Malicious software that locks users out of systems or data until a ransom is paid. Big data repositories are high-value targets.

API Security

Securing Application Programming Interfaces (APIs) that connect different systems and apps. In big data, APIs are used to integrate tools, making them targets for attackers.

SIEM (Security Information and Event Management)

Software that collects and analyzes security events across systems in real-time. Helps detect threats in large-scale, data-rich environments.

Cloud Security

Protecting data and applications hosted in cloud environments. As many big data platforms are cloud-based, encryption, access control, and monitoring are essential.

Data Masking

A technique to hide original data with modified content. It's used in testing and training environments to maintain confidentiality in big data.

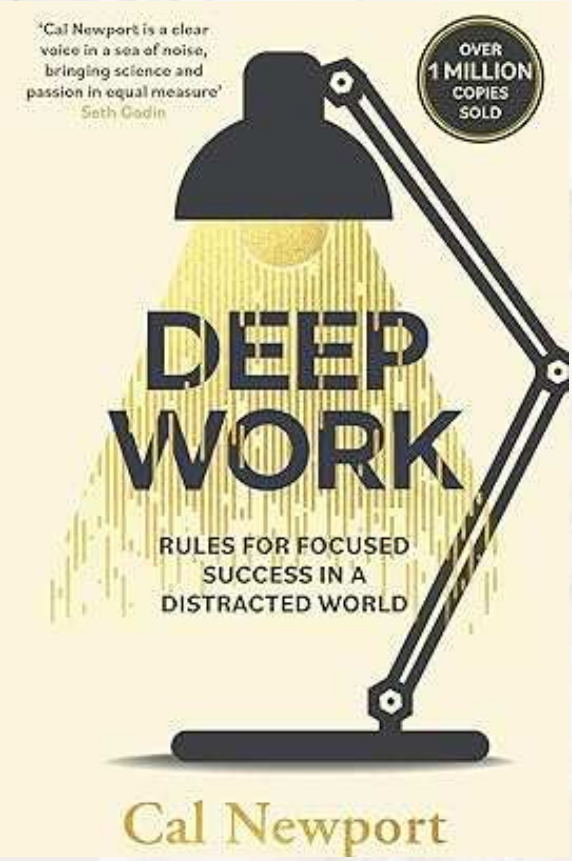
Celebrating International Girls in ICT Day

In a world shaped by technology, ICT is more than a career—it's a catalyst for change. At Presidency University, we believe that empowering women in ICT is not just about equality, but about creating a more innovative and inclusive tomorrow.

From coding to leadership, from classrooms to hackathons, our women in tech are building the future—one line of code, one bold idea at a time.

Glow up

Current Read



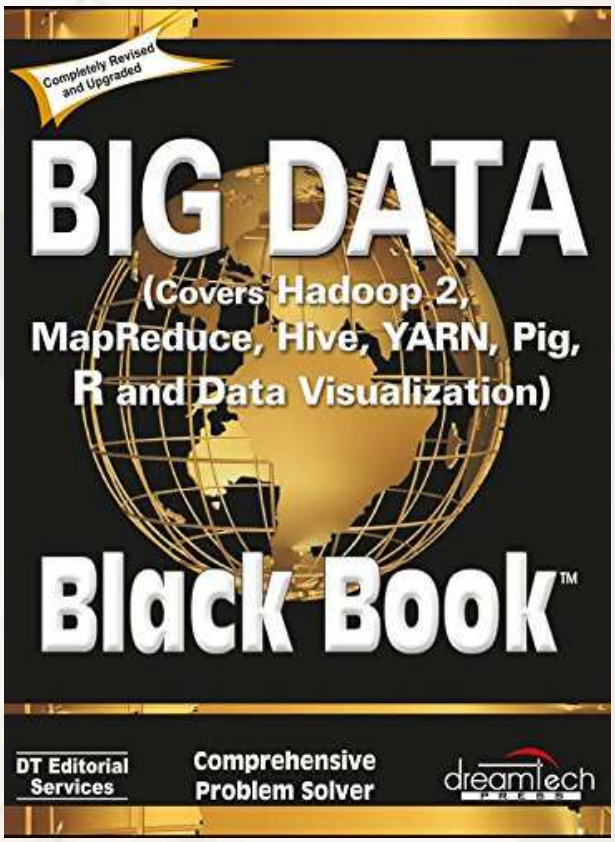
Deep Work by Cal Newport

Deep Work by Cal Newport emphasizes the power of focused, distraction-free work in achieving professional success in today's digitally noisy world. Newport argues that deep work — the ability to concentrate intensely on demanding tasks — is a crucial but diminishing skill in the modern age. Through research, real-life examples, and practical strategies, he shows how cultivating this focus can lead to greater productivity and meaningful achievements.

The book offers actionable rules such as:

- *Work Deeply*
- *Embrace Boredom*
- *Quit Social Media*
- *Drain the Shallows*

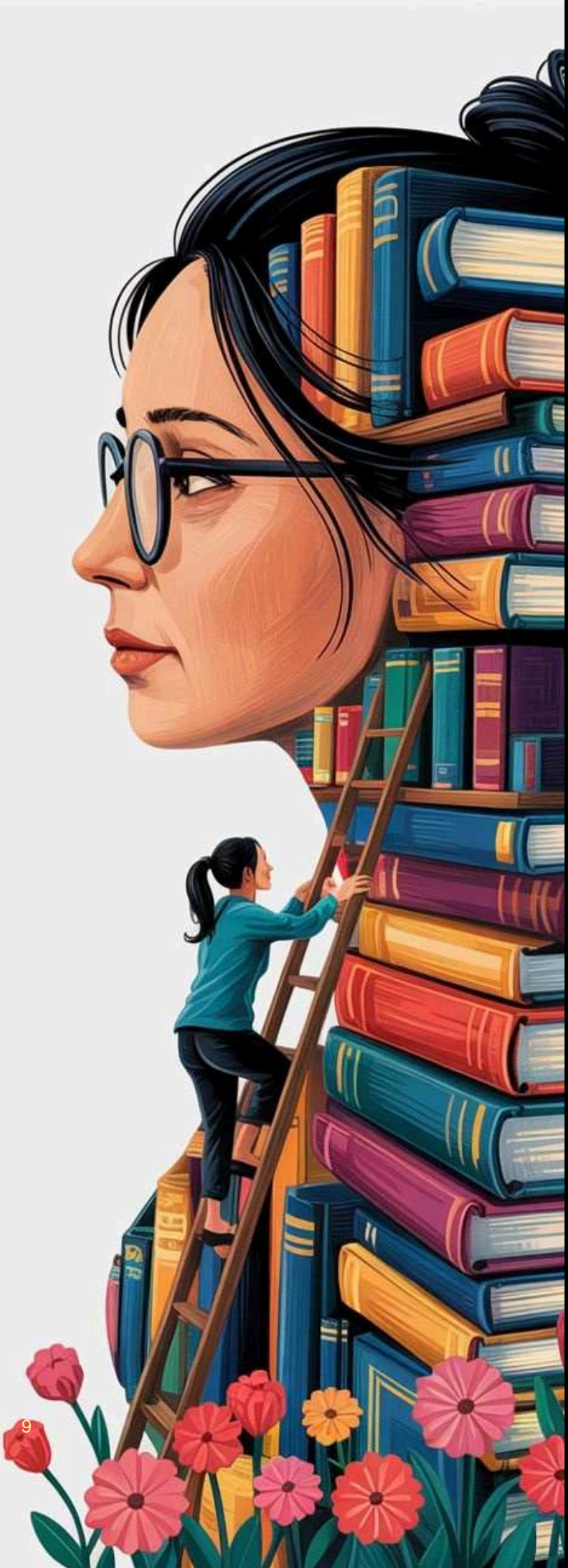
Though some ideas may be challenging in certain work environments, Newport's insights are universally valuable. Deep Work is a timely, thought-provoking guide for anyone looking to reclaim their focus and produce truly valuable work.



Big Data Black Book by DT Editorial Services

The Big Data Black Book by DT Editorial Services is a comprehensive resource that covers essential Big Data technologies like Hadoop 2, MapReduce, Hive, YARN, Pig, and R, along with data visualization techniques. Designed for both beginners and intermediate learners, it provides a solid foundation in data processing, analytics, and system architecture, supported by practical examples and real-world applications.

Structured to facilitate both learning and practical application, the book guides readers through the Big Data lifecycle and presents real-world use cases to contextualize the discussed technologies. Its focus on practical implementation makes it a valuable resource for those looking to build a robust understanding of Big Data platforms and analytics tools. While the book is dense with information, its clear explanations and structured format make complex concepts accessible to readers with varying levels of experience in the field.



THE WRAP UP

Where Sustainability Meets Security, and Vision Finds Voice

As we close this edition, we reflect on a powerful narrative woven through each page—the fusion of sustainability goals with cybersecurity and big data. From futuristic frameworks like EvoSentinel to real-world smart grids, from women leading space frontiers to students decoding quantum threats—the stories have echoed one message: progress needs protection.

This month's theme explored how the digital world is becoming the engine behind our green ambitions. Big data is not just numbers—it's nature decoded. Cybersecurity is not just defense—it's trust engineered. Together, they empower climate action, enable ethical AI, and ensure that smart technologies stay smart—and safe.

But innovation doesn't thrive in silos. It needs storytellers, researchers, artists, and engineers—like those featured here—who believe that every line of code and every byte of data can make the world better.

As you turn this final page, remember: sustainability isn't a finish line. It's a shared mission. And you, dear reader, are a part of it.

Let's code greener. Think bigger. Protect better.

See you in the next issue.
— Team Communique

THE COMMUNIQUE

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