SRM INSTITUTE OF SCIENCE OF TECHNOLOGY, KATTANKULATHUR

SCHOOL OF COMPUTING

DEPARTMENT OF COMPUTING TECHNOLOGIES

Event Report : FDP on Harnessing Green IT: Transforming Tomorrow's Challenges to Innovation

Brochure

Name and Designation of Conveners and Co-Conveners:

Dr. Arun V / Assistant Professor/ C.Tech
Dr. S. Padmini / Associate Professor/ C.Tech

Conducting Department: Computing Technologies

Date and Duration: 27.09.24 to 3.10.24

Type of event: Faculty Development Program

Mode of Conduction: Blended Physical and online Mode

Association with Professional Bodies/Government agency: nil

Total Number of Registered Participants: 22

Number of Internal/External participants: 15 internal / 07 External

Number of male/Female participants: 13 Female / 09 male

Number of participants category wise: students

About the FDP (Theme/Objective):

- To understand the principles of Green IT: Explore the foundational concepts of Green Information Technology and its role in reducing the environmental impact of computing.
- To identify emerging trends and challenges: Discuss the latest trends, challenges, and opportunities in the field of Green IT, including energy-efficient technologies, sustainable practices, and eco-friendly computing.
- To promote innovative solutions: Encourage the development of innovative strategies to address sustainability challenges in the IT industry through the adoption of green technologies and responsible IT practices.
- To highlight best practices in Green IT: Provide insights into industry best practices for energy efficiency, carbon footprint reduction, and resource optimization in IT systems and infrastructure.
- To inspire sustainable innovation in academia and industry: Motivate participants to contribute to sustainable development through research, education, and innovation in Green IT technologies and systems.

Targeted Audience: Faculty and Research Scholars

Number of Technical Sessions: 10

Session Details:

Inaugural session Details: Inaugural session is conducted in TP401/402**.**

Inauguration

Inauguration Photos

Session 1   : Topic: Green AI for Smart and Sustainable Development

Date and session   : 27.09.24   FN

Venue   :   TP401/402
Resource Person : Dr. Venkatesan / CSE, NIT, Puducherry.
Type   :   Theory

Alumni (Yes/No):   No
Designation with institution address:
                Department of CSE,
                NIT, Puducherry.

Mobile number: 9442314011
Any online profile link: https://sites.google.com/view/dr-venkatesan-m

Detailed Description of the session with outcomes and conducting venue:

The FDP session on **Green AI for Smart and Sustainable Development** highlighted the importance of creating energy-efficient AI systems to reduce environmental impact. Key discussions focused on optimizing AI models, using AI for sustainable agriculture, smart cities, and managing renewable energy resources. The session also explored the challenges of Green AI adoption, including ethical concerns and infrastructure limitations. Emphasis was placed on AI's alignment with the UN Sustainable Development Goals (SDGs) and its potential to drive global sustainability efforts. Participants were encouraged to integrate Green AI principles into their teaching and research.
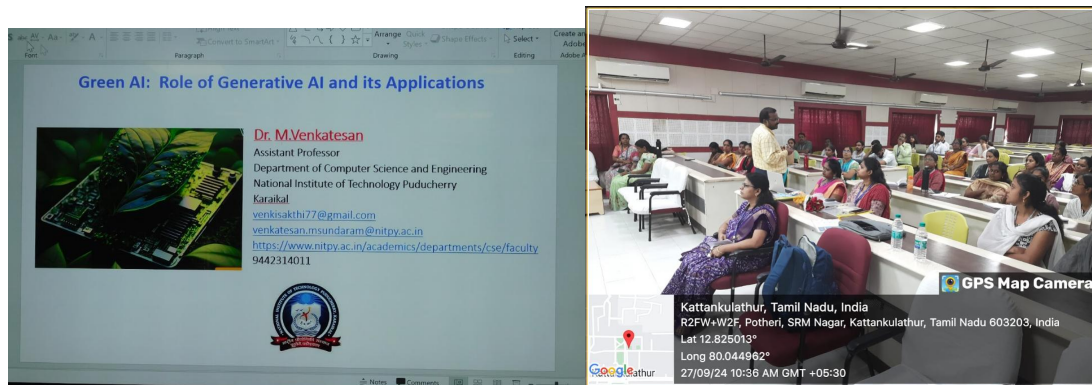
Session 1   Photos

Session 2 : Strategic Importance of ESG to the World of 2050

Date and session : 27.09.24   AN

Venue :   TP401/402

Resource Person :   Dr. Mohandas R

Founder & CEO CompassMet LLP

Alumni (Yes/No) :   No

Designation with institution address:

Founder & CEO CompassMet LLP

Mobile number: 9600066268

Any online profile link: https://www.linkedin.com/in/mohandoss-t/?originalSubdomain=in

Detailed Description about the session with outcomes and conducting venue:

The speaker highlighted the strategic importance of Environmental, Social, and Governance (ESG) in shaping the global landscape by 2050. Emphasis was placed on how ESG factors will influence sustainable business practices, investment strategies, and regulatory frameworks. The speaker also discussed the growing role of corporate responsibility in addressing climate change, social inequalities, and governance reforms. Integrating ESG into long-term strategies was presented as critical for ensuring resilience and competitive advantage in the future economy.

Session 2   Photos

Day 2

Session 3   : Application of IOT in Green Energy Integrated Smartgrid

Date and session : **28.09.24   FN**

Venue   :   **Online**

Resource Person :   Dr. K. Vijayakumar

                        Department of ECE ,

                        IIITDM, Chennai

Alumni (Yes/No)   :   No

Designation with institution address:

                        Department of ECE ,

                        IIITDM, Chennai

Mobile number: 9549659069

Any online profile link: https://www.iiitdm.ac.in/people/faculty/vijayakumar@iiitdm.ac.in

Detailed Description about the session with outcomes and conducting venue:

The speaker emphasized the role of IoT in optimizing green energy systems within smart grids, highlighting its potential to enhance real-time monitoring, energy efficiency, and grid stability. Key applications discussed included smart meters, predictive maintenance, and renewable energy integration. The session also explored how IoT can facilitate decentralized energy management, ensuring more sustainable and resilient energy networks.
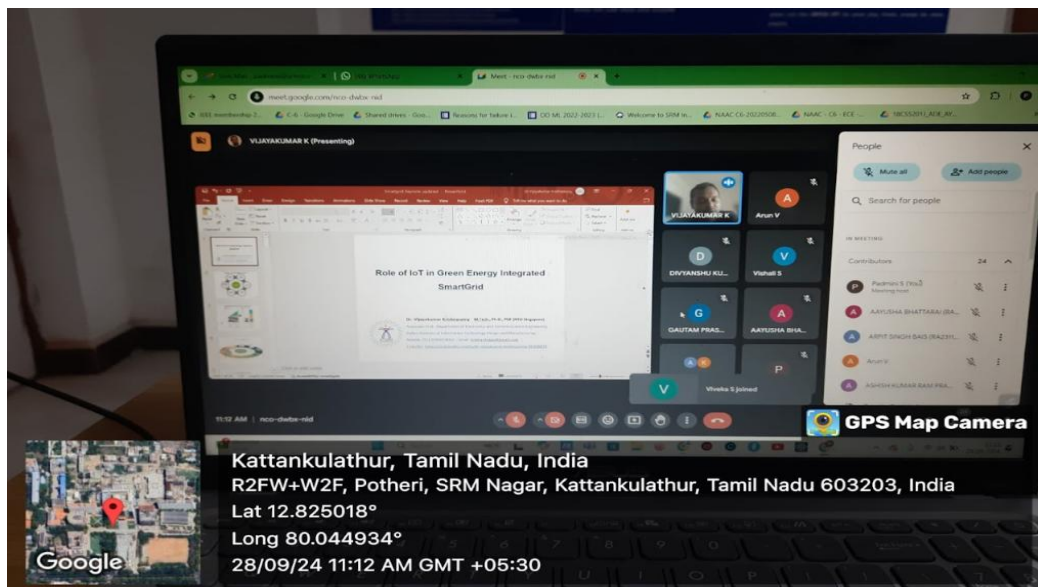
Session 3   Photos

Session 4 :   AI and Machine Learning for Optimizing Energy Usage in IT Systems

 Date and session : 28.09.24   AN
Venue   :   Online

 Resource Person :   Mr. M. Sreekanth,

Alumni (Yes/No) :   No
Designation with institution address:
                Microsoft FastTrack Recognized
                 Solution Architect | Principal Consultant at TTEC
                 Digital ,UK.

Mobile number:
Any online profile link: https://www.linkedin.com/posts/sreekanth-muralidharan_grateful-ftrsa-fasttrack-activity-7220749098037981184-VxoO/

Detailed Description about the session with outcomes and conducting venue:
The session explored the application of artificial intelligence (AI) and machine learning (ML) in enhancing energy efficiency within IT infrastructures. The speaker highlighted the growing need for sustainable energy solutions, emphasizing the role of AI in optimizing resource usage and reducing energy wastage. By demonstrating various machine learning models and their integration into IT systems, the talk provided valuable insights into how data-driven technologies can significantly reduce the carbon footprint of IT operations.
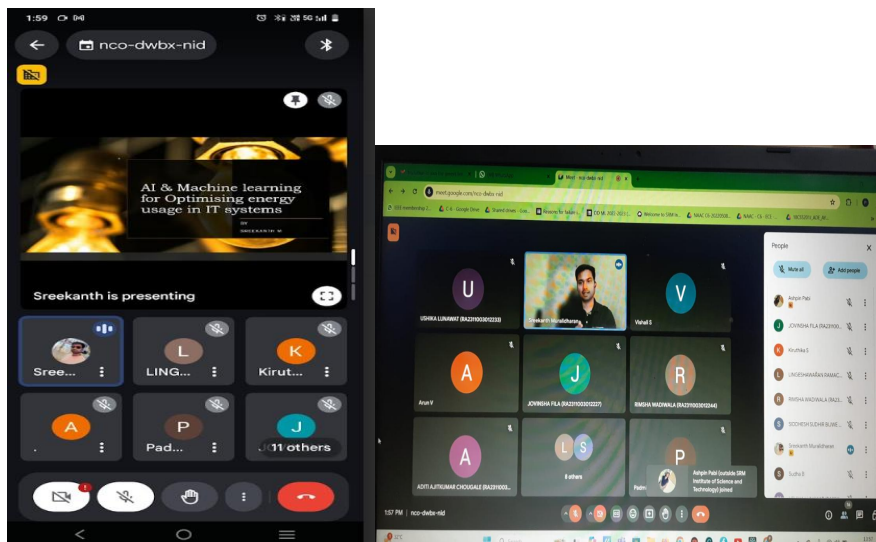
Session 4   Photos

Day 3

Session 5 :
Harnessing Green Computing and Sustainable AI:Paving the Path to a Greener Future

Date and session : 30-09-2024(Online)   9.30 -11 AM
Venue   :   Online

Resource Person :

> **Dr. Shivam ,**
> **Computer Society 20 in 20s Honoree |**
> **Engineering Lead @ZS**

Alumni (Yes/No) : No

Designation with institution address:

> **Computer Society 20 in 20s Honoree |**
> **Engineering Lead @ZS**

Mobile number: 9934619540
Any online profile link: https://www.linkedin.com/in/shivam-abhilash/?originalSubdomain=in

Detailed Description about the session with outcomes and conducting venue:

The speaker highlighted strategies for reducing energy consumption in AI processes, such as energy-efficient algorithms and sustainable data center practices. The session also explored how AI can be used to drive sustainability efforts in various industries, contributing to a greener and more sustainable future.

Session 6 : Eco-Friendly Hardware Design: Innovation in Low Power and Recyclable IT Components

Date and session : FN(10.30-12.00A.M)

Venue : **Online**

Resource Person : Mr. Md. Shafeulwara

Alumni (Yes/No) : No

Designation with institution address:
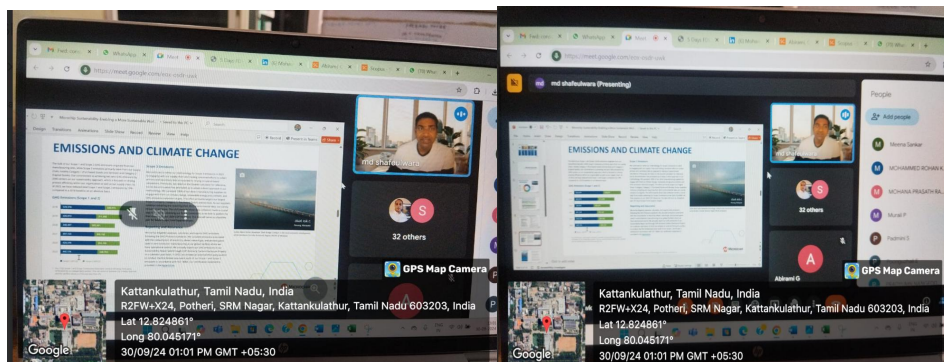
Senior Product Engineer
Microchip Technologies Inc, Arizona, USA

Mobile number: 9042299947

Any online profile link: -

Detailed Description about the session with outcomes and conducting venue:

The talk focused on the latest innovations in hardware design aimed at reducing the environmental impact of IT systems. The speaker discussed the importance of creating energy-efficient, low-power components and how these designs contribute to sustainability. They also emphasized the use of recyclable materials in hardware production, addressing the growing issue of e-waste and the need for circular economy principles in technology. Through real-world examples and cutting-edge research, the session shed light on how eco-friendly hardware solutions can help meet the increasing demand for greener IT systems without compromising performance. The event concluded with a discussion on future trends in sustainable hardware innovation, inspiring participants to consider environmental responsibility in their technological advancements.

Session 6   Photos

Day 4

Session 7   : **Sustainable Energy Solutions for IT Sector**

Date and session : 01/10/2024   FN(10-11.30A.M)

 Venue   :   **Turing Hall ,8th floor, tech park**

Resource Person :   **Dr. M. Venkata Ramanan**

Alumni (Yes/No)   :   No

Designation with institution address:
          Professor &Director, Institute for Energy Studies / MECH /Anna University

Mobile number: 9444221034
Any online profile link: M (annauniv.edu)

Detailed Description about the session with outcomes and conducting venue:

The talk focused on the growing energy demands of the IT industry and the urgent need for sustainable practices to reduce its environmental impact. The speaker highlighted key innovations such as the adoption of renewable energy sources, energy-efficient data centers, and AI-driven power management systems. The discussion also delved into smart grid integration and sustainable infrastructure, which aim to balance operational efficiency with environmental stewardship. By emphasizing both the economic and ecological benefits of sustainable energy solutions, the session provided valuable insights into how the IT sector can lead the charge toward a greener, more energy-conscious future.

Session 7   Photos

Session 8 : **Green Data Analytics: Harnessing Big Data for Environmental Sustainability**

Date and session : **01/10/2024   AN(1.30 to 3.00 PM)**

Venue : **Turing Hall ,8th floor, tech park**

Resource Person : **Mr. R. SelvaAnand**
Alumni (Yes/No) : **No**

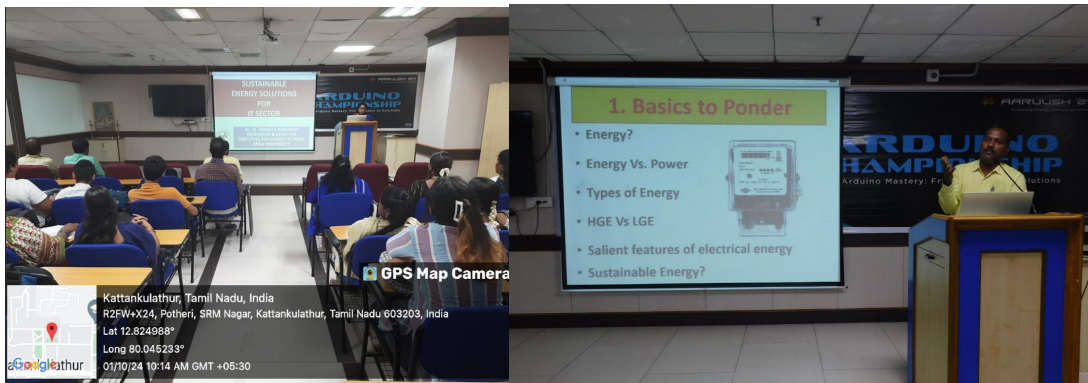**Designation with institution address:**

Assistant Consultant Technical Lead, TCS,Chennai

Mobile number: **9790855649**
Any online profile link: -

Detailed Description about the session with outcomes and conducting venue:

The talk focused on the growing energy demands of the IT industry and the urgent need for sustainable practices to reduce its environmental impact. The speaker highlighted key innovations such as the adoption of renewable energy sources, energy-efficient data centers, and AI-driven power management systems. The discussion also delved into smart grid integration and sustainable infrastructure, which aim to balance operational efficiency with environmental stewardship. By emphasizing both the economic and ecological benefits of sustainable energy solutions, the session provided valuable insights into how the IT sector can lead the charge toward a greener, more energy-conscious future.

Session 8 Photos

Day 5

Session 9   : **Block chain For Sustainability in Green ITk**

Date and session : **3.10.24 FN(10-11.30A.M)**

Venue   :   **Turing Hall ,8th floor, tech park**

Resource Person :   **Dr. C.V Suresh Babu**
Alumni (Yes/No) : **No**

Designation with institution address:

Director (Training and Development) Madras Computer Academy Chennai

Mobile number: 9840237456

Any online profile link: Prof. (Dr.) C.V. Suresh Babu | LinkedIn

Detailed Description about the session with outcomes and conducting venue:

The speaker explained how blockchain, known for its decentralized and transparent nature, can enhance green IT initiatives by improving resource tracking, enabling energy-efficient solutions, and fostering accountability in carbon reduction efforts. The talk highlighted use cases where blockchain has been successfully applied to monitor and optimize energy consumption, track the lifecycle of recyclable materials, and ensure the sustainability of IT infrastructure. Additionally, the speaker discussed the potential of blockchain in supporting circular economy models and enabling greener supply chains within the technology industry.

Session 9 Photos

Session 10   **: Enhancing Solar Energy Efficiency with Machine Learning- Based Irradiation Prediction**

Date and session : 3.10.24   AN(1-3.00 P.M)

Venue   **:   Turing Hall ,8th floor, tech park**

Resource Person :   **Mr. T Senthil Kumar**

Alumni (Yes/No) : No

Designation with institution address:

      Data Scientist, NYBL

Mobile number: 9941265572

Any online profile link: Dr Senthil Kumar T K | LinkedIn

Detailed Description about the session with outcomes and conducting venue:

The speaker highlighted how advanced ML algorithms can analyze historical weather patterns, satellite data, and environmental conditions to accurately forecast solar radiation, thereby optimizing the performance of solar panels. This predictive capability enables better energy management, reducing power losses and improving the overall reliability of solar energy systems. The speaker also shared real-world case studies where ML-based irradiation prediction has led to significant improvements in energy output and operational efficiency. The session concluded with an engaging discussion on the future potential of AI and ML in renewable energy, leaving participants with a deeper understanding of how these technologies can drive sustainable energy solutions.
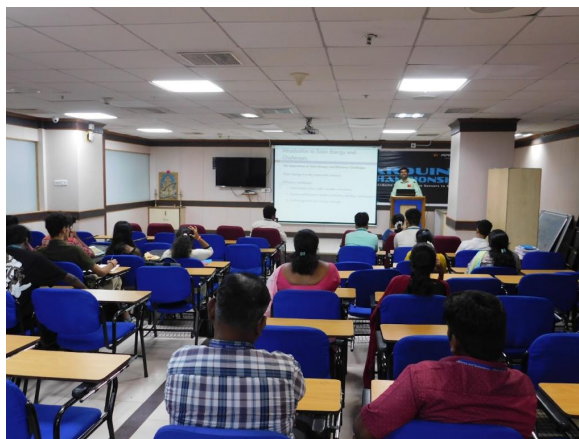
Event Outcome:

- Strengthened knowledge of integrating AI, machine learning, IoT, and blockchain with sustainable energy and green IT solutions.
- Greater awareness of the strategic importance of ESG and how sustainability will shape the world of 2050.
- Practical insights into designing energy-efficient IT systems, eco-friendly hardware, and applying renewable energy solutions in the IT sector.
- Enhanced ability to use big data analytics and emerging technologies to promote environmental sustainability.
- Commitment to adopting greener practices in teaching, research, and industry projects, contributing to a smarter and more sustainable future.

Feedback collected from participants and Resource persons (Yes/No): Yes

Financial statement:

External Sponsoring Agency with amount: nil
Contribution from University: nil
Income through Registration: Rs:
Total Expenditure incurred: Rs:
Amount returned to University: Rs:

Signature of Conveners, Co –conveners:

Signature of the department event coordinator:

Signature of HOD: `