St. PETER'S
INSTITUTE OF HIGHER EDUCATION & RESEARCH
(DEEMED TO BE UNIVERSITY u/s 3 OF THE UGC ACT 1956)
Accredited by NAAC with A+ Grade, AICTE Approved and
ISO 9001: 2015 Certified.
Avadi, Chennai - 600 054, Tamil Nadu.

ANNUAL PROGRESS REPORT FOR SDG 16 – 2024

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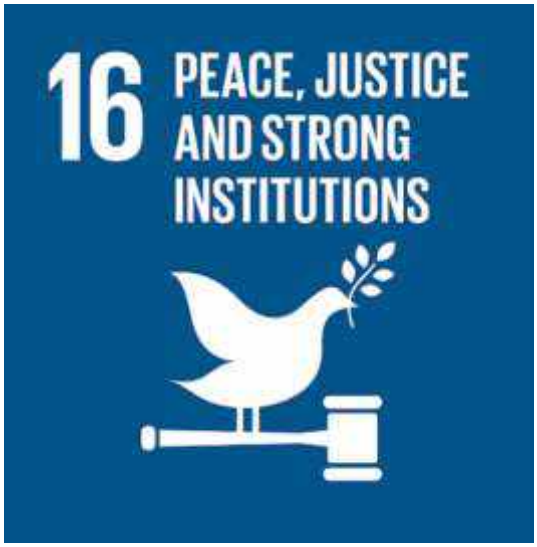


17.3.16. University publishes progress against SDG 16

The institution has multiple Memoranda of Understanding (MOUs) and agreements with national and international partners, which help reinforce strong institutional relationships and ensure effective implementation of academic, research, and community engagement programs. These partnerships foster transparency and accountability in collaboration, ensuring that SPIHER remains committed to ethical standards and responsible management.

SPIHER also places a strong emphasis on conflict resolution and equal opportunity, ensuring that students, faculty, and staff can freely voice concerns and seek justice in a safe, supportive environment. By promoting a culture of open dialogue and respect for human rights, SPIHER fosters a peaceful and inclusive campus community where everyone can thrive. Through these efforts, SPIHER is actively contributing to building a just, equitable, and accountable society that aligns with the global vision of SDG 16.

TISLA Award for Exemplary Leadership in Engineering

The TISLA Award stands as a prestigious recognition granted to individuals who demonstrate outstanding dedication to the engineering profession and contribute significantly to the nation's sustainable development. In alignment with SDG 16: Peace, Justice and Strong Institutions, the award underscores ethical leadership, transparent practices, and the strengthening of professional and academic institutions.

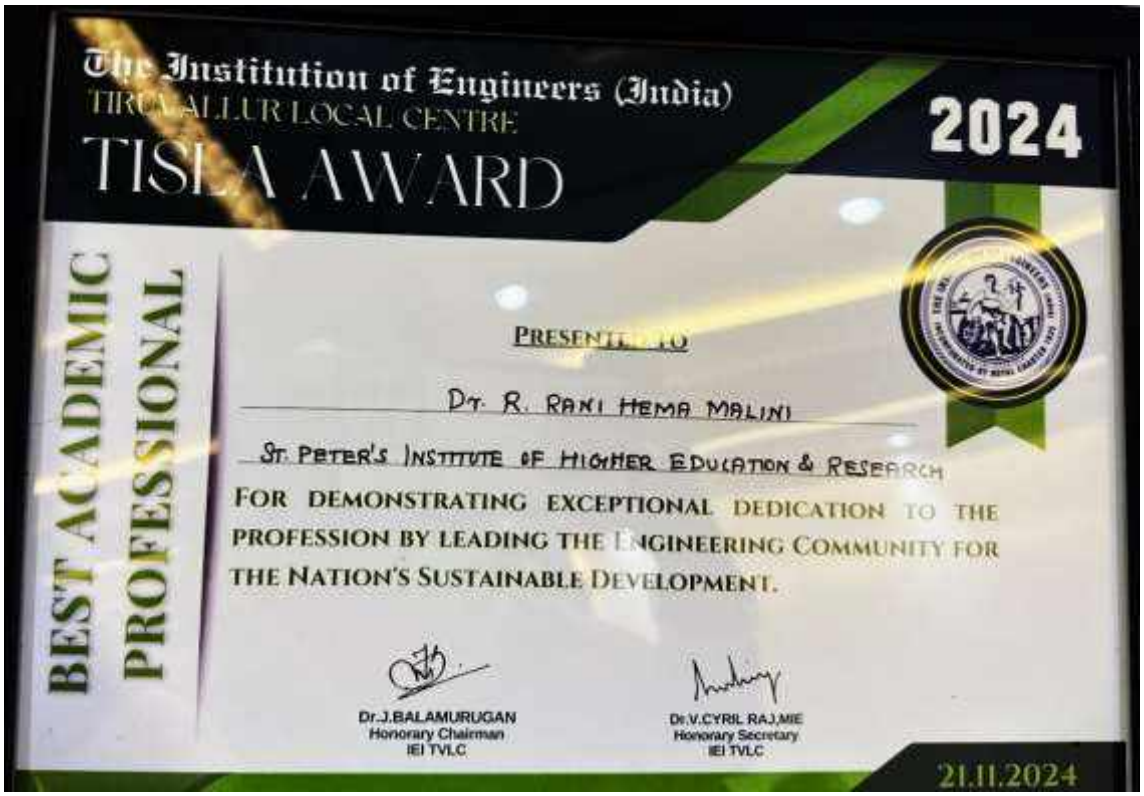
At St. Peter's Institute of Higher Education and Research (SPIHER), this recognition holds special significance. SPIHER has long been committed to nurturing responsible engineers who uphold integrity, accountability, and societal welfare. Individuals associated with SPIHER who receive the TISLA Award exemplify the university's core values by promoting ethical engineering, advocating for fair decision-making, and contributing to strong institutional frameworks within the engineering community.

Awardees from SPIHER often lead initiatives that enhance governance structures, develop safety and quality standards, and encourage inclusive and just professional practices. Their work directly supports SDG 16 by promoting transparency, fostering collaboration, and strengthening engineering bodies that guide national development. Additionally, they play a pivotal role in mentoring students, empowering young engineers, and expanding platforms for dialogue, research, and innovation within SPIHER and beyond.

Through their leadership and contributions, TISLA Award recipients linked to SPIHER reinforce the university's mission to develop responsible citizens and robust institutions. Their achievements support the broader goals of peace, justice, and strong institutions by ensuring that engineering advancements remain ethical, equitable, and aligned with sustainable national progress—true reflections of SDG 16.

Invitation for 8th Annual General Meeting (AGM) 2024 &TISLA Award 2024

Dr. R. Rani Hemamalini receiving TISLA award for Best Academic Professional



Certificate of TISLA award for Best Academic Professional

Research Article published under SDG 16

Amru M, Kannan RJ, Ganesh EN, Muthumarilakshmi S, Padmanaban K, Jeyapriya J, Murugan S. Network intrusion detection system by applying ensemble model for smart home. International Journal of Electrical and Computer Engineering. 2024 Jun;14(3):3485-94.

International Journal of Electrical and Computer Engineering (IJECE)
Vol. 14, No. 3, June 2024, pp. 3485~3494
ISSN: 2088-8708, DOI: 10.11591/ijece.v14i3.pp3485-3494

Network intrusion detection system by applying ensemble model for smart home

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Article Info

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Gradient boosting
Intrusion detection
Mirai attacks
Multi-class prediction
Smart home systems

ABSTRACT

The exponential advancements in recent technologies for surveillance become an important part of life. Though the internet of things (IoT) has gained more attention to develop smart infrastructure, it also provides a large attack surface for intruders. Therefore, it requires identifying the attacks as soon as possible to provide a secure environment. In this work, the network intrusion detection system, by applying the ensemble model (NIDSE) for Smart Homes is designed to identify the attacks in the smart home devices. The problem of classifying attacks is considered a classification predictive modeling using eXtreme gradient boosting (XGBoosting). It is an ensemble approach where the models are added sequentially to correct the errors until no further improvements or high performance can be made. The performance of the NIDSE is tested on the IoT network intrusion (IoT-NI) dataset. It has various types of network attacks, including host discovery, synchronized sequence number (SYN), acknowledgment (ACK), and hypertext transfer protocol (HTTP) flooding. Results from the cross-validation approach show that the XGBoosting classifier classifies the nine attacks with micro average precision of 94% and macro average precision of 85%.

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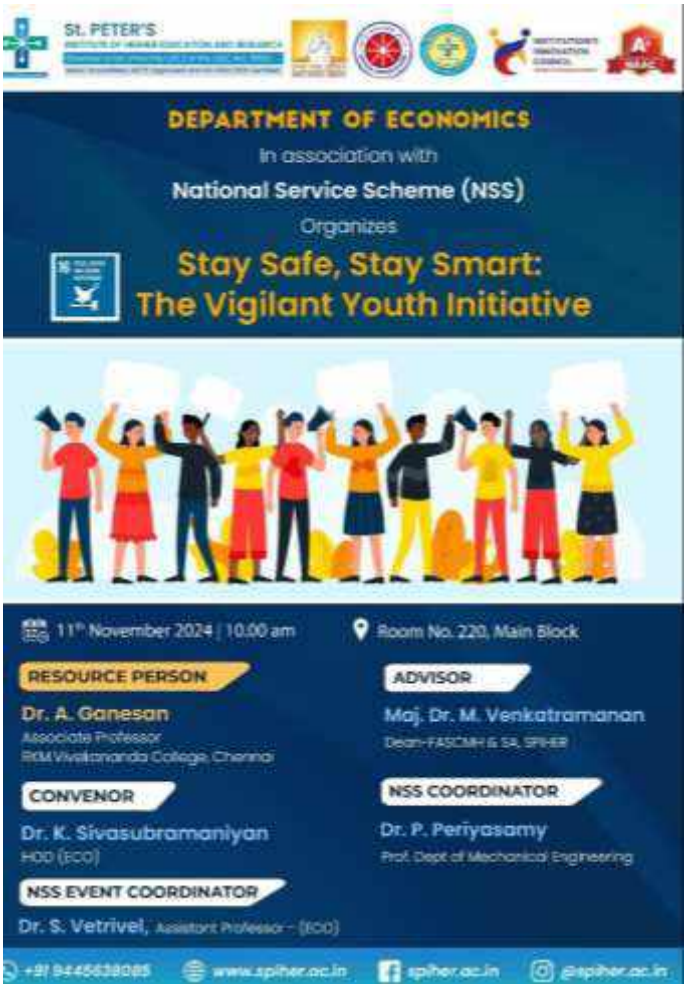
1. INTRODUCTION

Smart home systems are most sought after these days for securing homes conveniently and automatedly. They are also used for efficient resource management as well. It is particularly useful for wellness-assisted living, monitoring the health condition of older adults who prefer to stay in their homes rather than be in hospitals. Despite so many benefits, smart home systems have security and privacy concerns, especially with baby monitors being hacked. Mirai's malware attack is on closed-circuit television (CCTV) systems, which has questioned the security and privacy of smart home systems.

Program Title	Stay Safe, Stay Smart: The Vigilant Youth Initiative
Duration of Event	5 hrs
Organized by	Department of Economics in Association with NSS
Date and Time	11.11.24, 10.00am
Co-ordinator	Dr.S.Vetrivel-AP-Economics
Convenor	Dr.K.Sivasubramaniyan, HoD-Economics and Dr. P. Periyasamy Prof /Mech, SPIHER
Mode of Deliver	**Offline**
Resource Person	Dr.A.Ganesan, AP-RKM Vivekanenda College, Chennai
Venue	SPIHER Campus
Key Points Discussed	**Support for Public Health Initiatives**: Contribute to broader public health goals related to oral health, such as reducing the prevalence of dental caries and improving overall health outcomes in the community.
Objectives	**Community Engagement**: Foster a sense of community involvement and ownership of health by engaging local stakeholders, schools, and dental professionals in the screening process. **Access to Dental Care**: Provide access to dental services for underserved populations who may not have regular access to dental care due to financial or geographical constraints.
Outcome of the program / Benefits	**Increased Awareness of Oral Health**: The camp can educate participants about the importance of oral hygiene, proper brushing and flossing techniques, and regular dental visits, leading to improved long-term dental health.

Total no. of students participated	95
No. of faculty members participated	04
Brochure (JPEG)	

DEPARTMENT OF POLITICAL SCIENCE
REPORT ON ANTI-DRUG AWARENESS PROGRAMME
Date: 28th August 2024

Programme Brochure

Participants taking the anti-drug pledge as part of the Anti-Drug Awareness Programme at SPIHER

Participants in Anti-Drug Awareness Programme

Participants stage performance as a part of Anti-Drug Awareness Programme

மக்கள்குரல் 30-8-2024 9

செட்டிநாடு வித்யாஷ்ரம் நடத்திய "மைத்திரி–24" நட்பு விழா போட்டி: 'சாம்பியன்களின் சாம்பியன்' பட்டத்தை வென்றது பிஎஸ் சீனியர் ஸ்கூல்

MAITHRI '24

Ph: 2538 5686

Coverage of the Anti-Drug Awareness published in Makkal Kural dated, 30th August 2024

Program Title	Public Awareness on Digital Safety and Ethics
Program theme	**Stay Secure, Stay Smart: Navigating the Digital World Safely**
Duration of Event	2 hrs
Organized by	Department of Mechanical Engineering in Association with NSS
Date and Time	06.11.24, 9.30am to 11.30 am
Co-ordinator	Dr. P. Periyasamy Prof /Mech,
Convenor	Dr. N. Rajeswari/HoD/Mech
Mode of Deliver	Offline
Resource Person	Dr. N. Rajeswari/HoD/Mech
Venue	Konambedu village
Key Points Discussed	Promote the adoption of safe online practices (such as enabling two-factor authentication, regular software updates, and cautious sharing of personal information) among 50% of participants by the end of the year, as measured by follow-up surveys.
Objectives	Increase Awareness of Digital Safety Risks By the end of the session, increase public awareness of at least five major digital safety risks (such as phishing, online harassment, identity theft, malware, and data privacy concerns) by 50%, as measured through surveys.
Outcome of the program / Benefits	Participants demonstrate a better understanding of key digital safety concepts, such as data privacy, secure online practices, and recognizing phishing attempts.
Total no. of students participated	25
No. of faculty members participated	03

Photograph 1		
Photograph 2		

Brochure (JPEG)	

2024 Book Chapters → SDG Mapping

Sl. No	Faculty	Title of Book Chapter	Department	Publisher	SDG(s)	Justification
1	Dr. S. Brindha	**Enhancing Security in Cross-Border IoT Transactions Through Predictive ML Using BI-GRU**	Computer Science	Iterative International Publishers	SDG 9, SDG 16 (Peace, Justice & Strong Institutions)	Strengthens cybersecurity and trust in digital infrastructure.

Conclusion:

SPIHER's commitment to SDG 17 exemplifies how strategic partnerships can create meaningful, sustainable impact. By fostering collaborations with government entities, industries, NGOs, academic institutions, and international networks, SPIHER has successfully enhanced its capacity to address complex sustainable development challenges in a holistic manner. These partnerships enrich academic and research programs, provide valuable resources and expertise, and better align institutional initiatives with global sustainability priorities.

The institution's focused efforts on waste management, resource conservation, and social outreach demonstrate tangible benefits to both local communities and broader environmental goals. SPIHER's multi-stakeholder approach not only strengthens its resilience but also promotes inclusivity, shared responsibility, and long-term sustainability across all its activities. This integrated ecosystem of cooperation enables SPIHER to contribute actively and effectively to the achievement of the Sustainable Development Goals.