

MONTHLY NEWSLETTER



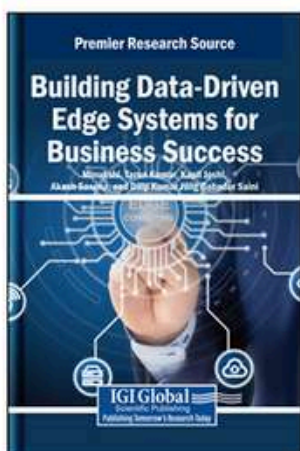
September 2025 (25.08.25 to 01.09.25)

RESEARCH ACCOMPLISHMENTS



Dr. Dilip Kumar Jang Bahadur Saini has authored and published a book titled: "Building Data-Driven Edge Systems for Business Success" published by IGI Global Scientific Publishing (2026).

IGI Global
Scientific Publishing
Publishing Tomorrow's Research Today



Certificate of Publication

This certificate is proudly presented to

Dilip kumar Jang Bahadur Saini

In recognition of their outstanding
research contribution to

*Building Data-Driven Edge Systems
for Business Success*

Published by IGI Global Scientific Publishing; ©2026

With gratitude for your dedication to advancing
knowledge and scholarship.

A handwritten signature in black ink, reading "Lindsay Wertman".

Lindsay Wertman, President
IGI Global Scientific Publishing

MONTHLY NEWSLETTER



September 2025 (01.09.25 to 08.09.25)

RESEARCH ACCOMPLISHMENTS



Dr. Dilip Kumar Jang Bahadur Saini and Dr. G Hemanth Kumar collaboratively published a research paper titled: "Advanced Deep Learning for Real-Time Fraud Detection in Banking: Scalable and High-Accuracy Solutions" in the proceedings of the 2025 6th International Conference for Emerging Technology (INCET), IEEE, held in Belgaum, India, from 23rd–25th May 2025.

DOI: <https://doi.org/10.1109/INCET64471.2025.11139964>

Advanced Deep Learning for Real-Time Fraud Detection in Banking: Scalable and High-Accuracy Solutions

Publisher: IEEE [Cite This](#) [PDF](#)

Dilip Kumar Jang Bahadur Saini; Nilesh Shelke; Prajwalasimha S N; Amit Pimpalkar; G Hemanth Kumar; Monish L [All Authors](#)

[Abstract](#)

Abstract:

The speedy digital evolution of the banking industry has resulted in a geometric explosion in fraudulent transactions, which in turn requires intelligent fraud detection tools in real time. This work presents a new state-of-the-art deep learning model that combines innovative architectures, such as transformer-based models and Graph Neural Networks (GNNs), for higher detection precision and scalability. Differing from traditional rule-based and machine learning methods, our approach uses temporal patterns of transactions, user behavior embeddings, and adversarial training to counter changing fraud strategies. Our method is compared with state-of-the-art techniques on big real-world banking datasets, exhibiting higher precision, recall, and real-time detection efficiency. We further provide an explainability module for transparency in the model, thereby overcoming regulatory and trust issues within financial institutions. The design is optimized for effortless deployment within high-throughput banking systems to minimize latency and adaptive learning. This work has a major breakthrough in fraud detection methods, yielding a solid ground for future AI-based financial security solutions.

Published in: 2025 6th International Conference for Emerging Technology (INCET)

Date of Conference: 23-25 May 2025 **DOI:** 10.1109/INCET64471.2025.11139964

Document Sections

- I. Introduction
- II. Literature Survey
- III. Proposed Method
- IV. Results and Discussion
- V. Conclusion

[Show Full Outline](#)

Authors

Figures

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September 2025 (01.09.25 to 08.09.25)

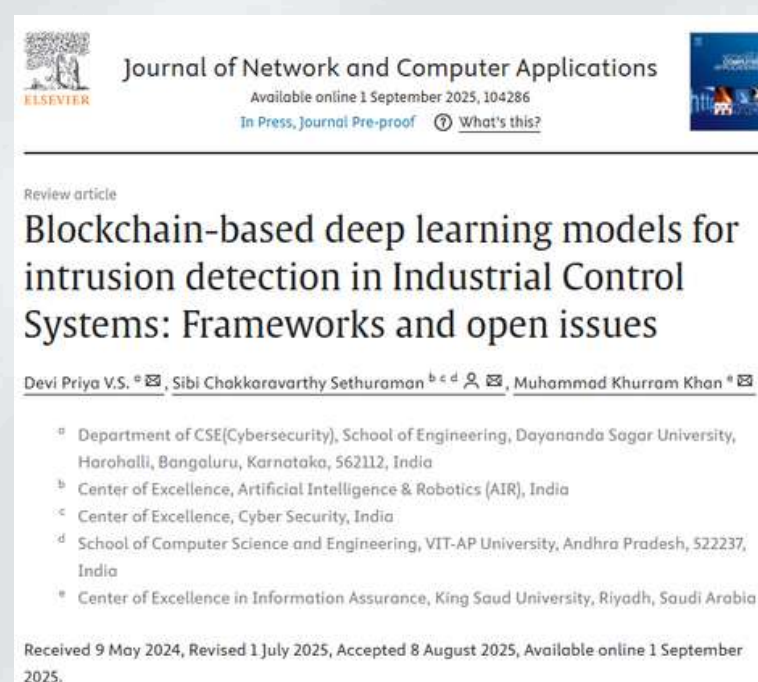
RESEARCH ACCOMPLISHMENTS



Dr. Devi Priya V.S. has published an article titled: "Blockchain-based Deep Learning Models for Intrusion Detection in Industrial Control Systems: Frameworks and Open Issues" in Elsevier's Journal of Network and Computer Applications (JNCA).

This work represents a significant step forward in advancing cybersecurity for industrial infrastructures, combining the predictive power of AI with the trust and transparency of blockchain.

DOI: <http://dx.doi.org/10.1016/j.jnca.2025.104286>



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September 2025 (15.09.25 to 22.09.25)

RESEARCH ACCOMPLISHMENTS



Ms. Deepthika Karuppusamy has presented a research paper titled:

“A Graph Neural Network and Digital Twin Co-Driven Framework for Energy Optimization in IoT Ecosystems through Sustainable Intelligence”

at the 3rd International Conference on Intelligent Cyber Physical System and Internet of Things (ICoICI-2025), organized by the Department of EEE, JCT College of Engineering and Technology, and technically co-sponsored by IEEE. The conference was held from 17th–19th September 2025 at Coimbatore, Tamil Nadu, India.



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September 2025 (22.09.25 to 29.09.25)

RESEARCH ACCOMPLISHMENTS



Dr. Dilip Kumar Jang Bahadur Saini and Dr. G Hemanth Kumar collaboratively published a research paper titled: "AI-Powered Defense Against Advanced Persistent Threats (APTs): Techniques, Case Studies, and Future Research Directions" in the proceedings of the 3rd International Conference on Sustainable Computing and Data Communication Systems (ICSDCS-2025), indexed by IEEE Xplore.

DOI: <https://doi.org/10.1109/ICSDCS65426.2025.11166697>

Conferences > 2025 3rd International Confer.

AI-Powered Defense Against Advanced Persistent Threats (APTs): Techniques, Case Studies, and Future Research Directions

Publisher: IEEE Cite This PDF

Prajwalasimha SN ; Nilesh Shelke ; Dilip Kumar Jang Bahadur Saini ; Amit Pimpalkar ; G Hemanth Kumar ; Shivamma D All Authors

Abstract

Document Sections

- I. Introduction
- II. Various Techniques
- III. Case Studies of APTs
- IV. AI-Powered Defences
- V. Future Research Directions

Show Full Outline ▾

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Keywords

Abstract:
Advanced Persistent Threats (APTs) are a formidable and ever-evolving threat to global cyber security, particularly against critical infrastructure, government networks, and cyber-physical systems. Exhibiting high levels of sophistication, persistence, and stealth, APTs have a propensity to bypass traditional defense mechanisms dependent on signatures and pre-defined rules. Recent advances in Artificial Intelligence (AI), such as deep learning, federated learning, graph neural networks, reinforcement learning, and adversarial learning, have introduced novel paradigms for real-time threat detection and proactive defense strategies. This paper presents a comprehensive and organized overview of state-of-the-art AI-based solutions for the detection, attribution, deception, and response to APTs. Illustrative case studies from sectors like financial networks, healthcare networks, cloud infrastructures, and national critical assets are discussed, highlighting realistic challenges, performance metrics, and optimal implementation practices. Emerging challenges are also explored, such as data availability constraints, labeling inconsistencies, risks of model compromise, vulnerability to adversarial attacks, and scalability constraints in real-time. The findings emphasize the supreme necessity of interdisciplinary research, as well as collaborative activities by academia, industry, and government, to create scalable, explainable, and anticipatory cyber security solutions that can effectively address APTs in future digital ecosystems.

Published in: 2025 3rd International Conference on Sustainable Computing and Data Communication Systems (ICSDCS)

Date of Conference: 06-08 August 2025 **DOI:** 10.1109/ICSDCS65426.2025.11166697

Date Added to IEEE Xplore: 24 September 2025 **Publisher:** IEEE

***ISBN Information:** **Conference Location:** Erode, India

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September 2025 (22.09.25 to 29.09.25)

RESEARCH ACCOMPLISHMENTS



Ms. Vinitha V has co-authored and published a research article titled:

“Next-Gen Air Quality Index Forecasting with Hybrid Machine Learning Models and Cloud Synergy” in the International Journal of Engineering Trends and Technology (IJETT), Volume 73, Issue 8, August 2025.

DOI: <https://doi.org/10.14445/22315381/IJETT-V73I8P111>

International Journal of Engineering Trends and Technology
ISSN: 2231-5381 / <https://doi.org/10.14445/22315381/IJETT-V73I8P111>

Volume 73 Issue 8, 129-136, August 2025
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Original Article

Next-Gen Air Quality Index Forecasting with Hybrid Machine Learning Models and Cloud Synergy

Diana George¹, R. Navya², Vinitha V³

¹Department of Computer Science and Engineering, Dayananda Sagar University, Bangalore, Karnataka, India.

²Department of Electronics and Communication Engineering, Dayananda Sagar University, Bangalore, Karnataka, India.

³Department of Cyber Security, Dayananda Sagar University, Bangalore, Karnataka, India.

¹Corresponding Author : dianageorge-cse@dsu.edu.in

Received: 01 March 2025

Revised: 17 July 2025

Accepted: 31 July 2025

Published: 30 August 2025

Abstract - Globally, nowadays, air pollution remains a major menace in terms of both environmental and public health; as such, accurate monitoring and forecasting the quality of air are essential for mitigating its deleterious impact. The Air Quality Index (AQI) is used to detect the quality of air and its hazardous effects on human health. This paper tries to formulate a forecasting mechanism for AQI by measuring the rate of the major issues causing air pollutants such as PM2.5, PM10, O₃, CO, SO₂, NO₂, Pb(lead), and NH₃. Hence, this paper formulates a model that combines both Convolutional Neural Networks (CNNs) along with Transformers and an enhanced Attention Mechanism to improve the prediction accuracy. CNNs are intended for effective feature extraction and capturing spatial patterns in air quality data, while the transformer model captures the sequential dependencies, allowing for accurate predictions over time. This proposed hybrid model addresses the limitations of age-old time-series models like ARIMA and LSTM, which often struggle to analyze the complex spatial-temporal air quality relationship. The proposed model was trained using the same historical air quality data provided by the Government of India (GoI) for training and validation, with real-time deployment with live sensor data. Also, the use of cloud computing ensures efficient handling of live data streams, enabling real-time data processing, prediction, and updates. This allows for quick, scalable and reliable predictions on large, diverse datasets, timely public health alerts, and supports proactive environmental management.

Keywords - Air Quality Forecasting, Attention mechanism, Transformer, CNN, Cloud computing.

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September 2025 (22.09.25 to 29.09.25)

RESEARCH ACCOMPLISHMENTS



Mr. Sharanabasappa Tadkal has successfully presented a research paper titled "Hybrid Transformer-CNN with Explainable AI for Cyber Threat Intelligence: Enhancing Transparency and Adversarial Resilience in Security Operations" at the 3rd International Conference on Intelligent Cyber Physical System and Internet of Things (ICoICI-2025), organized by the Department of EEE, JCT College of Engineering and Technology, Coimbatore, Tamil Nadu, held on 17th–19th September 2025.



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September 2025 (22.09.25 to 29.09.25)

RESEARCH ACCOMPLISHMENTS



Mr. Sharanabasappa Tadkal has achieved a significant milestone with the successful filing and subsequent publication of his Indian Patent Application titled "Self-Powered IoT Health Band for Continuous Rural Health Monitoring." The patent application (Publication No. 202541083755 A), developed in collaboration with his co-inventors, details a groundbreaking, battery-free health monitoring band that utilizes dual energy harvesting from kinetic motion and a flexible solar cell to continuously track vital signs. This crucial step in the patent process was officially marked by the publication on September 26, 2025.

(12) PATENT APPLICATION PUBLICATION		(21) Application No. 202541083755 A
(19) INDIA		
(22) Date of Filing of Application : 03/09/2025		(43) Publication Date : 26/09/2025
(54) Title of the invention : Self-Powered IoT Health Band for Continuous Rural Health Monitoring		
(51) International classification : A61B0005000000, A61B0005143500, A61B0005205000, A61B0005240000, G16H00040070000		(71) Name of Applicant : 1. Dayananda sagar university Address of Applicant : Assistant Professor Department of Computer Science and Engineering, Dayananda Sagar University Devarganahalli Bengaluru South District, Karnataka, India 562112 Bengaluru 2. Prof. Bharath M B 3. Prof. Pooja Shree H R 4. Prof. Mala B A 5. Prof. Sharanabasappa Tadkal 6. Prof. Rakshit R Name of Applicant : NA Address of Applicant : NA (72) Name of Inventor : 1. Prof. Bharath M B Address of Applicant : Assistant Professor Department of Computer Science and Engineering, Dayananda Sagar University Devarganahalli Bengaluru South District, Karnataka, India 562112 Bengaluru 2. Dayananda sagar university Address of Applicant : Assistant Professor Department of Computer Science and Engineering, Dayananda Sagar University Devarganahalli Bengaluru South District, Karnataka, India 562112 Bengaluru 3. Prof. Rakshit R Address of Applicant : Assistant Professor Department of Computer Science and Engineering, Dayananda Sagar University Devarganahalli Bengaluru South District, Karnataka, India 562112 Bengaluru 4. Dr. Santosh Kumar J Address of Applicant : Associate Professor, Department of Computer science and Technology, Dayananda Sagar University Devarganahalli Bengaluru South District, Karnataka, India 562112 Bengaluru 5. Prof. Pooja Shree H R Address of Applicant : Department of Computer Science and Engineering, Dayananda Sagar University Devarganahalli Bengaluru South District, Karnataka, India 562112 Bengaluru 6. Prof. Mala B A Address of Applicant : Department of Data Science Dayananda Sagar University Devarganahalli Bengaluru South District, Karnataka, India 562112 Bengaluru 7. Prof. Sharanabasappa Tadkal Address of Applicant : Department of Computer Science and Engineering, Dayananda Sagar University Devarganahalli Bengaluru South District, Karnataka, India 562112 Bengaluru
(57) Abstract : The present invention relates to a self-powered health monitoring band designed to provide continuous and reliable tracking of vital health parameters without the need for frequent charging. The device integrates dual energy harvesting mechanisms, including a kinetic energy harvester and a flexible solar film, to capture power from natural body movements and ambient light. An energy management circuit ensures efficient storage and utilization of the harvested energy, thereby enabling long-term autonomous operation. The band incorporates one or more biosensors for real-time monitoring of vital signs such as heart rate, blood oxygen saturation (SpO2), and blood pressure. A microcontroller unit manages the sensing, processing, and power optimization tasks. For enhanced accessibility, the system is equipped with a local language audio alert module that provides offline voice feedback, making it especially suitable for elderly users and those with limited literacy. Optionally, the invention includes a wireless communication unit that securely transmits health data to smartphones, hospital servers, or telemedicine platforms, supporting broader healthcare integration. The proposed health band is compact, wearable, and user-friendly, making it a valuable tool for preventive healthcare, rural health monitoring, and smart city wellness ecosystems.		
No. of Pages : 12 No. of Claims : 13		

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September 2025 (22.09.25 to 29.09.25)

RESEARCH ACCOMPLISHMENTS



Dr. Mubeen Ahmed Khan and Dr. Devi Priya V S collaboratively published a research paper titled: "Adaptive Multi Stream Modified CNN-LSTM Based Real-Time Sign Language Translation with 3D Pose Estimation and Temporal Modelling" in the proceedings of the 2025 International Conference on Computing Technologies (ICOCT), held in Bengaluru, India, on June 13-14, 2025.

DOI: <https://doi.org/10.1109/ICOCT64433.2025.11118664>

Conferences > 2025 International Conference...

Adaptive Multi Stream Modified CNN-LSTM Based Real-Time Sign Language Translation with 3D Pose Estimation and Temporal Modelling

Publisher: IEEE [Cite This](#) [PDF](#)

P. Naresh ; Nivetha R ; Shreyas Rajendra Hole ; Mubeen Ahmed Khan ; Tanvir H Sardar ; Devi Priya V S [All Authors](#)

11 Full Text Views

Abstract:
Sign language functions as the essential communication tool for hearing and speech-disabled people. There is substantial communication failure occurring between users who know sign language and those who do not understand it. A deep learning-based real-time sign language translation system provides the solution to this communication problem according to this research. The system uses Improved Convolutional Neural Networks (CNNs) to extract spatial features and Long Short-Term Memory (LSTM) networks to model temporal sequences for effective conversion of sign gestures to text and speech. Benchmark sign language datasets enable the model to reach high evaluation standards through its real-time operational capabilities. Experimental work proves that the modified CNN-LSTM-based 3D Pose Estimation and Temporal Modelling solution surpasses conventional machine learning technologies which makes it effective enough for practical deployment. The system runs efficiently on mobile platforms while being optimized for operation on edge devices therefore it remains accessible in multiple settings.

Published in: 2025 International Conference on Computing Technologies (ICOCT)

Date of Conference: 13-14 June 2025 **DOI:** 10.1109/ICOCT64433.2025.11118664

Date Added to IEEE Xplore: 15 August 2025 **Publisher:** IEEE

► ISBN Information: **Conference Location:** Bengaluru, India

Document Sections:
I. Introduction
II. Literature Survey
III. Methodology
IV. Results and Discussion
V. Conclusion

Authors
Figures
References
Keywords
Metrics

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September 2025 (25.08.25 to 01.09.25)

FACULTY ACHIEVEMENTS



Dr. Mubeen Ahmed Khan, has contributed as a Reviewer for the 2nd International Conference on Multidisciplinary Research and Innovations in Engineering (MRIE-2025), organized by K.R. Mangalam University, Gurugram, Haryana, India, in association with IEEE Delhi Section.

The conference was held in hybrid mode on 30th–31st July 2025 and brought together researchers and academicians from diverse disciplines of engineering.



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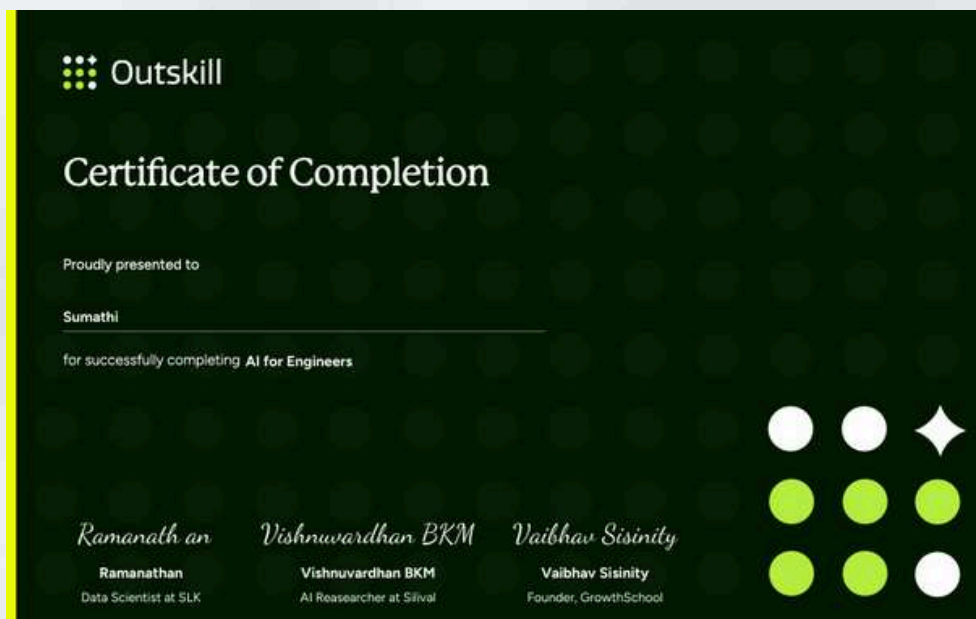
September 2025 (15.09.25 to 22.09.25)

FACULTY ACHIEVEMENTS



Dr. D Sumathi has successfully completed the “AI for Engineers” program offered by Outskill, guided by industry experts.

The program provided hands-on exposure to the fundamentals and applications of Artificial Intelligence, equipping learners with practical skills to design and implement AI-driven solutions for real-world engineering challenges.



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September 2025 (15.09.25 to 22.09.25)

FACULTY ACHIEVEMENTS



Dr. Mubeen Ahmed Khan has successfully completed an online training program on Cyber Security & Digital Forensics, organized by the MSME-Technology Development Centre (PPDC), Ministry of MSME, Government of India. The training was conducted from 9th August 2025 to 17th August 2025.



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September 2025 (15.09.25 to 22.09.25)

FACULTY ACHIEVEMENTS



Dr. Mubeen Ahmed Khan recently contributed as a Reviewer for the IEEE International Conference on Advances in Computing Research on Science Engineering and Technology (ACROSET 2025). The conference was organized by Acropolis Institute of Technology and Research Indore, India.

The conference was held on 27th – 28th September 2025 and brought together researchers and academicians from diverse disciplines of engineering.



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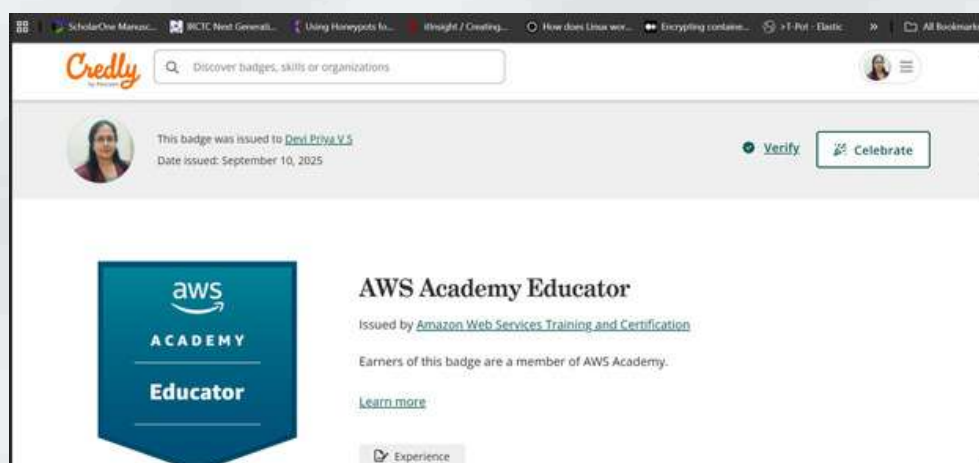
September 2025 (15.09.25 to 22.09.25)

FACULTY ACHIEVEMENTS



Dr. Devi Priya V.S. has been recognized as an AWS Academy Educator, issued by Amazon Web Services Training and Certification on 10th September 2025.

This credential acknowledges her role as a certified member of AWS Academy, enabling her to integrate industry-relevant cloud computing content into academic programs and equip students with practical AWS skills that align with industry standards.



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September 2025 (22.09.25 to 29.09.25)

FACULTY ACHIEVEMENTS



Dr. Mubeen Ahmed Khan recently contributed as a Reviewer for the IEEE International Conference on Advances in Computing Research on Science Engineering and Technology (ACROSET 2025). The conference was organized by Acropolis Institute of Technology and Research Indore, India. The conference was held on 27th – 28th September 2025 and brought together researchers and academicians from diverse disciplines of engineering, science, and technology.



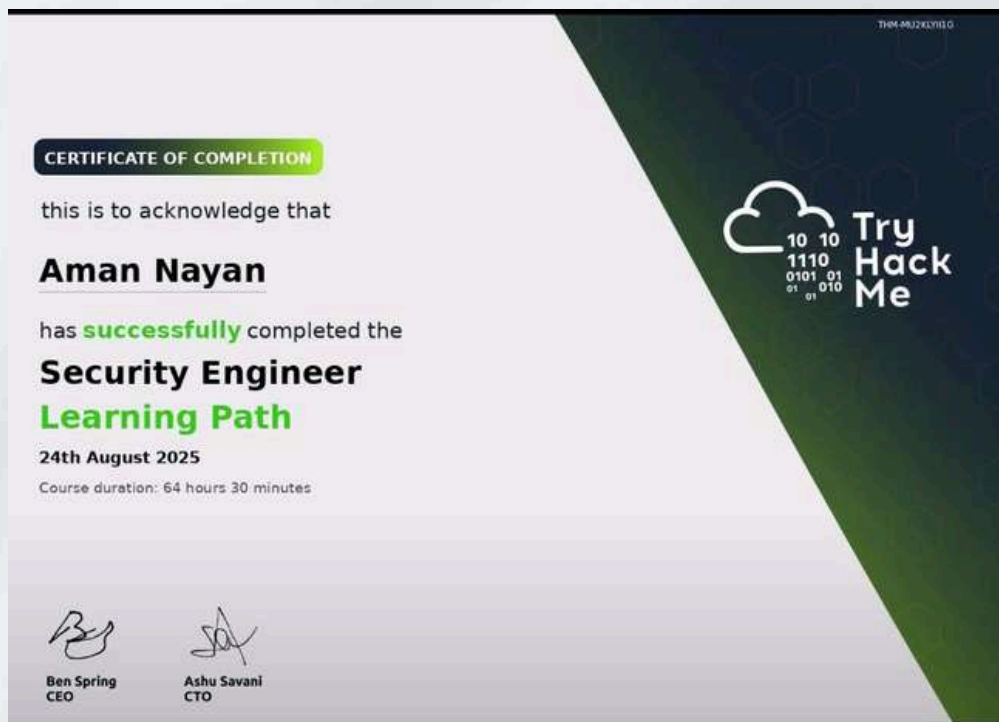
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September 2025 (25.08.25 to 01.09.25)

STUDENT ACHIEVEMENTS

Mr. Aman Nayan (ENG23CY0004) has successfully completed the Security Engineer Learning Path on TryHackMe on 24th August 2025, with a total course duration of 64 hours and 30 minutes.



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September 2025 (25.08.25 to 01.09.25)

STUDENT ACHIEVEMENTS

Mr. Kishan G A (ENG23CY0020) has successfully completed the Introduction to Penetration Testing course from Security Blue Team on 27th August 2025.

This certification provided a foundational understanding of ethical hacking and penetration testing, covering the core goals, methods, and assessment types used by cybersecurity professionals to evaluate and strengthen system defences.



MONTHLY NEWSLETTER



September 2025 (25.08.25 to 01.09.25)

STUDENT ACHIEVEMENTS

Ms. Poorvika N (ENG23CY0030) has successfully completed the Blue Team Junior Analyst Training Pathway from Security Blue Team on 24th August 2025.

This intensive training pathway validated skills and hands-on expertise in critical areas of cyber defence



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September 2025 (01.09.25 to 08.09.25)

STUDENT ACHIEVEMENTS

Mr. Mukesh Prasad Gupta (ENG24CY0136) has successfully completed a Cyber Security Internship at Elevate Labs from 23rd June 2025 to 28th July 2025, under the Skill India initiative recognized by the Ministry of MSME, Government of India.



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September 2025 (15.09.25 to 22.09.25)

STUDENT ACHIEVEMENTS

Mr. Venkata Sai Tanveesh Ramma (ENG24CY0119) has participated in DSU DevHack 2.0, a challenging 36-hour hackathon organized by Dayananda Sagar University, held from September 12th to 13th, 2025. Working with a team called "The Incredibles" he was recognized for his successful completion of the intensive event. This achievement highlights his dedication and ability to work under pressure, showcasing a strong commitment to practical application and teamwork.



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September 2025 (15.09.25 to 22.09.25)

STUDENT ACHIEVEMENTS

Mr. Vaishanth Mohan (ENG23CY0044) has successfully completed the SOC Program Foundations Training on 31st August 2025.

The program provided foundational knowledge and hands-on exposure to Security Operations Center (SOC) practices, including monitoring, incident response, and threat detection etc.



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September 2025 (15.09.25 to 22.09.25)

STUDENT ACHIEVEMENTS

Mr. Vaishanth Mohan (ENG23CY0044) received a Certificate of Appreciation for participating in the Recursive V2 International Hackathon, organized by the Department of Computer Science and Engineering, Dayananda Sagar College of Engineering, on 3rd and 4th September 2025.

The hackathon provided a platform for students to apply their technical skills, creativity, and problem-solving abilities to real-world challenges, fostering innovation and collaboration.



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September 2025 (15.09.25 to 22.09.25)

STUDENT ACHIEVEMENTS

Mr. Akshay R Hegde (ENG23CY1001) has successfully earned the prestigious Certified Ethical Hacker (CEH) credential from EC-Council on 4th September 2025 (Certification No: ECC0247851936).

The CEH credential is recognized globally as a benchmark in cybersecurity expertise



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September 2025 (15.09.25 to 22.09.25)

STUDENT ACHIEVEMENTS

Mr. Aman Kumar (ENG23CY0051) has successfully completed the Deloitte Cyber Job Simulation on September 7th, 2025. This program, offered in partnership with Forage, provided foundational knowledge and hands-on exposure to cybersecurity practices.

Deloitte.

Aman Kumar
Cyber Job Simulation

Certificate of Completion
September 7th, 2025

Over the period of September 2025, Aman Kumar has completed practical tasks in:
Cyber security

A handwritten signature in black ink, appearing to read "T. McCreery".

Tina McCreery
Chief Human
Resources Officer,
Deloitte

Enrollment Verification Code CG7WZn8Pg2t5uX6 | User Verification Code 68bd2a93955172412c4e6d8 | Issued by Forage

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September 2025 (15.09.25 to 22.09.25)

STUDENT ACHIEVEMENTS

Mr. Darshan H Teppad (ENG22CY0008) has successfully completed the Blue Team Junior Analyst training pathway on September 13th, 2025. This program demonstrates his proven knowledge and practical ability in several areas of security



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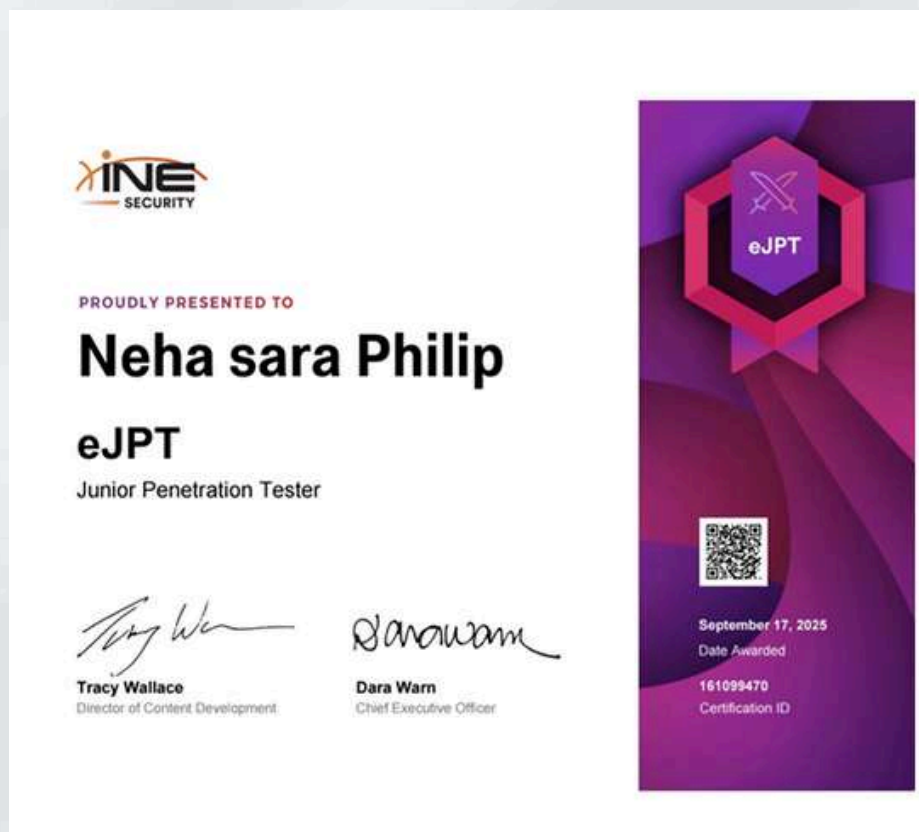


September 2025 (22.09.25 to 29.09.25)

STUDENT ACHIEVEMENTS

Ms. Neha Sara Philip (ENG22CY0036) has successfully completed the eJPT (Junior Penetration Tester) certification on September 17, 2025.

The program provided comprehensive foundational knowledge and practical, hands-on exposure to essential penetration testing practices, including reconnaissance, vulnerability assessment, exploitation, post-exploitation, and reporting methodologies within the cybersecurity domain.



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September 2025 (22.09.25 to 29.09.25)

STUDENT ACHIEVEMENTS

Mr. Manjunath Vittal Naik (ENG23CY1002) has successfully completed the Certified Ethical Hacker (CEH) examination and has met all the necessary criteria for official certification.

The CEH certification validates the foundational knowledge and technical skills required to effectively operate in the domain of ethical hacking and information security.

