सरदार वल्लभभाई राष्ट्रीय प्रौद्योगिकी संस्थान,सूरत

Sardar Vallabhbhai National Institute of Technology, Surat

संगणक विज्ञान एवं अभियांत्रिकी विभाग

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

NEWSLETTER | DECEMBER 2024 | ISSUE 12

DEPARTMENT VISION

The vision of Computer Science and Engineering Department is to recognize itself as a globally renowned learning center in the field of Computer Science & Engineering and foster research and innovations for the global good.

DEPARTMENT MISSION

The mission of Computer Science and Engineering Department is to

- **Impart education that encourages students to read critically, reason analytically, communicate persuasively, apply professionally and prepare them to excel in the field of computing.**
- **Imbibe strong-willed attitude in the students, research scholars and its own community to use their knowledge and skill-sets for the improvement of the society, country, and global community.**
- **Provide education based on ethical values resulting in knowledge and skills valued by industry and society.**
- **Impart training and create an environment that enables students and faculty members alike to engage in lifelong learning and pursuit of knowledge.**

MESSAGE FROM HEAD OF THE DEPARTMENT

The Department has implemented National Education Policy (NEP) 2020 from the academic year 2023-24 at UG level and year 2024-25 at PG level. The curriculums of UG and PG programs are designed as per new education policy with a multidisciplinary approach. Two M.Tech. programs, M.Tech. Information Security and Privacy (ISP) and M.Tech. Data Science (DS) are started from academic year 2023-24. PG admission in all three programs M.Tech. CSE, M.Tech. ISP, M.Tech. DS are running with full admissions. The department is also in the process of a third drive for faculty recruitment. Although there is overall slack in the recruitment process, 56% recruitment is reported till October in the department for the academic year 2024-25 with the highest salary of 52 lakhs. First batch of B.Tech. where 8th semester is completely industry based internship has been completed by the students successfully. M.Tech. students are also availing industry internships as a part of their dissertation. The department has a number of ongoing research projects. Third year student team won the Smart India Hackathon 2024 held at Chennai. Department conducted three international conferences, boot camp under ongoing Drone skill development program and Information Security Education Awareness program sponsored by Government of India. All the best to the students and faculty members for the next upcoming semester of academic year 2024-25.

PROF. MUKESH A. ZAVERI
Professor & Head,
DoCSE, SVNIT, Surat
Email: hod@coed.svnit.ac.in

STUDENT ACHIEVEMENTS

B.Tech. 3rd Year student's team Agrani has secured first position at the Grand Finale of the Smart India Hackathon (SIH-2024) held at Nodal Center Sri Sairam Engineering College, Chennai. Among the 50,000 teams that participated nationally, Team Agrani stood out, being one of the top 2.4 percentile teams to qualify for the finale. They were also one of the six teams selected to work on a prestigious problem statement no. SIH1623 presented by the Government of NCT Delhi. The Problem Statement involved developing a real-time monitoring and evaluation of software for Fire Department applications pertaining to inspections, follow-ups, and NOC issuance.

Neem Sheth (U22CS059)

Devesh Mehta (U22CS035)

Hanusha Jain (U22CS066)

Akshay Amin (U22CS067)

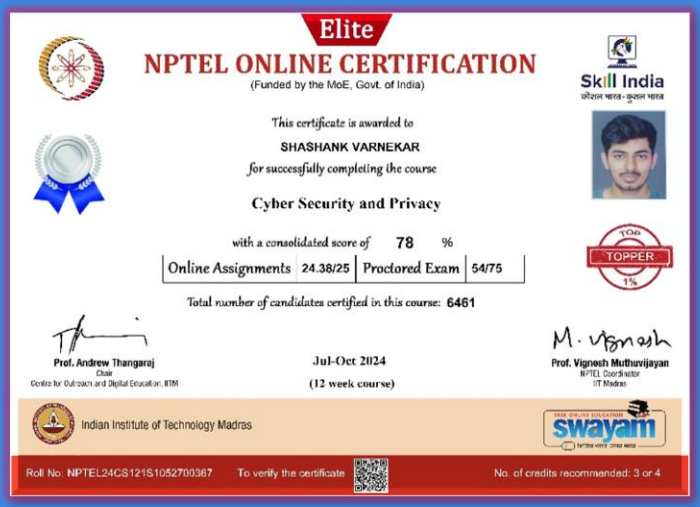
Vatsal Koisa (U22CS123)

Aayudh Panchal (U22CS050)

STUDENT ACHIEVEMENTS

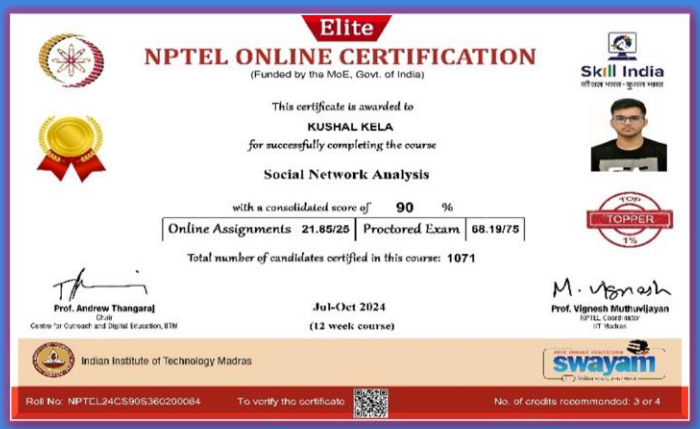
The following students have cleared NPTEL course "Cyber Security and Privacy" with Topper ranking.

Shashank Varnekar (P23CS005)



Sagar Patil (P23CS013)

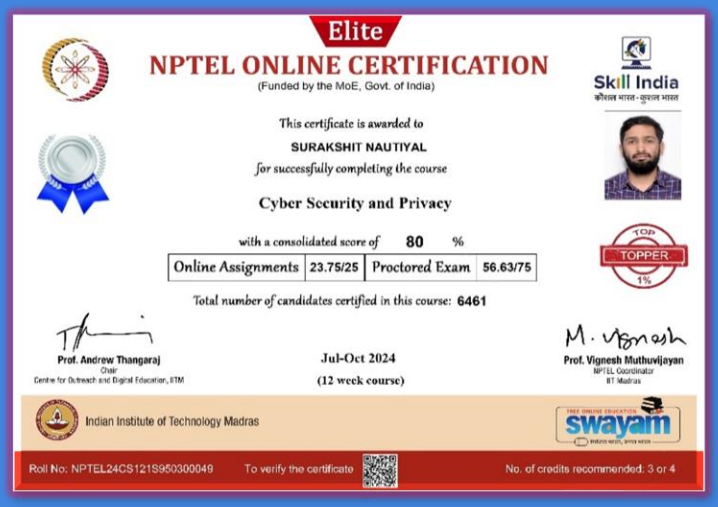
Kushal Kela (P23CS016)



Yokshan Hathile (P23IS003)

STUDENT ACHIEVEMENTS

Surakshit Nautiyal (P23IS004)



Elite

NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)

Skill India

This certificate is awarded to

SURAKSHIT NAUTIYAL

for successfully completing the course

Cyber Security and Privacy

with a consolidated score of 80 %

Online Assignments	23.75/25	Proctored Exam	56.63/75

TOPPER 1%

Total number of candidates certified in this course: 6461

Prof. Andrew Thangaraj, Chair, Centre for Outreach and Digital Education, IITM

Jul-Oct 2024 (12 week course)

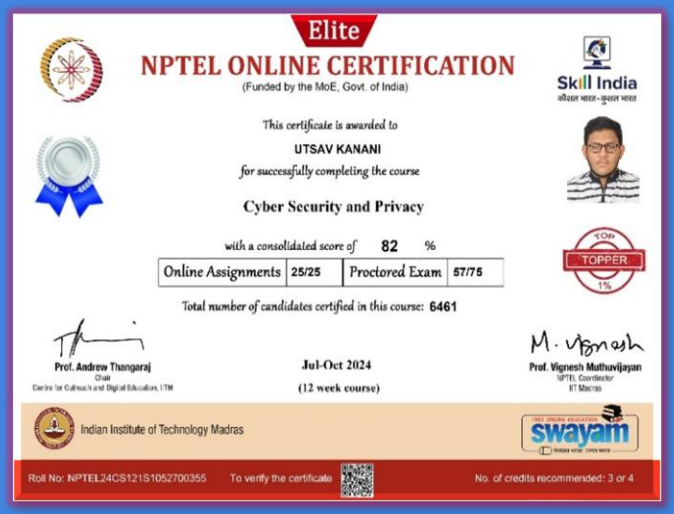
Prof. Vignesh Muthuvijayan, NPTEL Coordinator, IIT Madras

Indian Institute of Technology Madras

swayam

Roll No: NPTEL24CS121S950300049 To verify the certificate No. of credits recommended: 3 or 4

Utsav Kanani (P23IS005)



Elite

NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)

Skill India

This certificate is awarded to

UTSAV KANANI

for successfully completing the course

Cyber Security and Privacy

with a consolidated score of 82 %

Online Assignments	25/25	Proctored Exam	57/75

TOPPER 1%

Total number of candidates certified in this course: 6461

Prof. Andrew Thangaraj, Chair, Centre for Outreach and Digital Education, IITM

Jul-Oct 2024 (12 week course)

Prof. Vignesh Muthuvijayan, NPTEL Coordinator, IIT Madras

Indian Institute of Technology Madras

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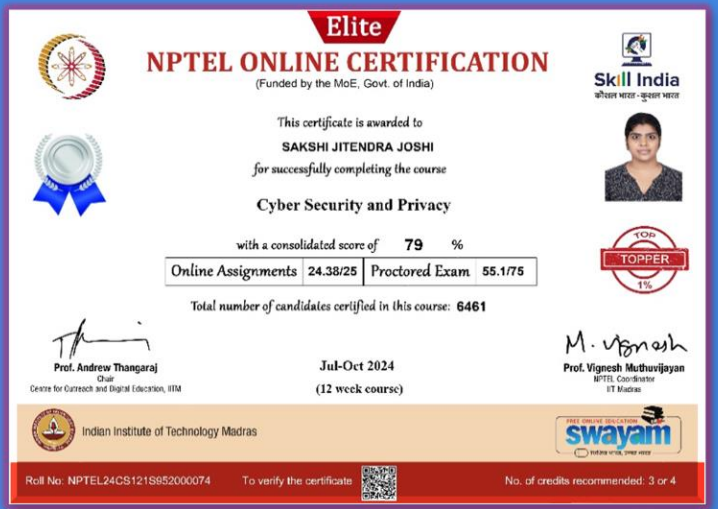
Roll No: NPTEL24CS121S1052700355 To verify the certificate No. of credits recommended: 3 or 4

Sakshi Joshi (P23IS014)



Elite

NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)

Skill India

This certificate is awarded to

SAKSHI JITENDRA JOSHI

for successfully completing the course

Cyber Security and Privacy

with a consolidated score of 79 %

Online Assignments	24.38/25	Proctored Exam	55.1/75

TOPPER 1%

Total number of candidates certified in this course: 6461

Prof. Andrew Thangaraj, Chair, Centre for Outreach and Digital Education, IITM

Jul-Oct 2024 (12 week course)

Prof. Vignesh Muthuvijayan, NPTEL Coordinator, IIT Madras

Indian Institute of Technology Madras

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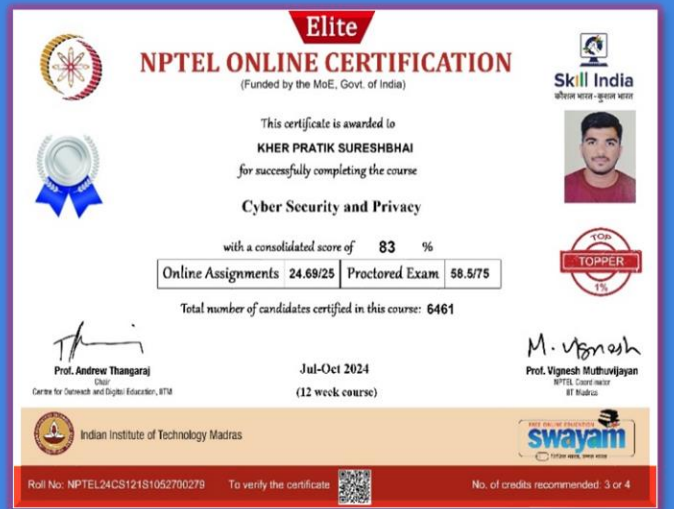
Roll No: NPTEL24CS121S952000074 To verify the certificate No. of credits recommended: 3 or 4

Pratik Kher (P24IS024)



Elite

NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)

Skill India

This certificate is awarded to

KHER PRATIK SURESHBHAI

for successfully completing the course

Cyber Security and Privacy

with a consolidated score of 83 %

Online Assignments	24.69/25	Proctored Exam	58.5/75

TOPPER 1%

Total number of candidates certified in this course: 6461

Prof. Andrew Thangaraj, Chair, Centre for Outreach and Digital Education, IITM

Jul-Oct 2024 (12 week course)

Prof. Vignesh Muthuvijayan, NPTEL Coordinator, IIT Madras

Indian Institute of Technology Madras

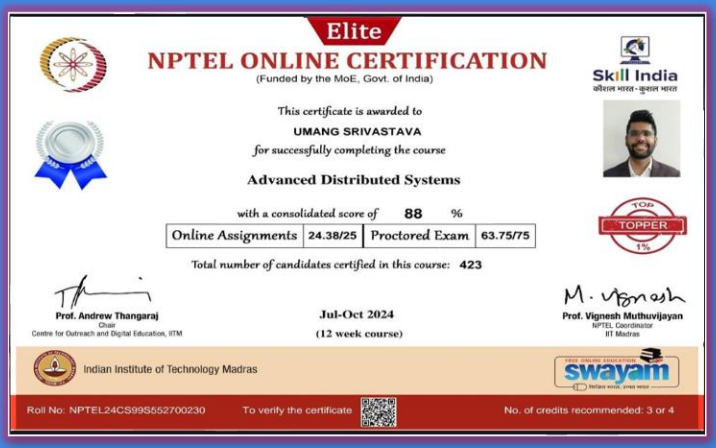
swayam

Roll No: NPTEL24CS121S1052700279 To verify the certificate No. of credits recommended: 3 or 4

STUDENT ACHIEVEMENTS

M. Tech II[nd] year student Umang Shrivastava has cleared two NPTEL courses "Advanced Distributed System" and "Deep Learning for Computer Vision" with Topper ranking.

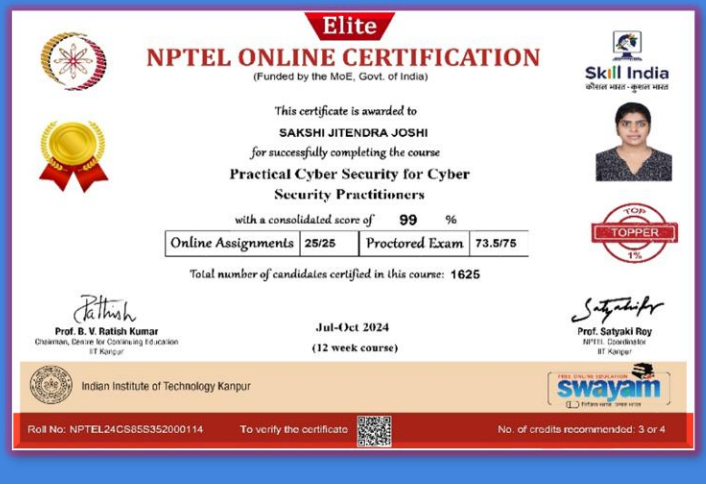
Umang Shrivastava (P23DS013)

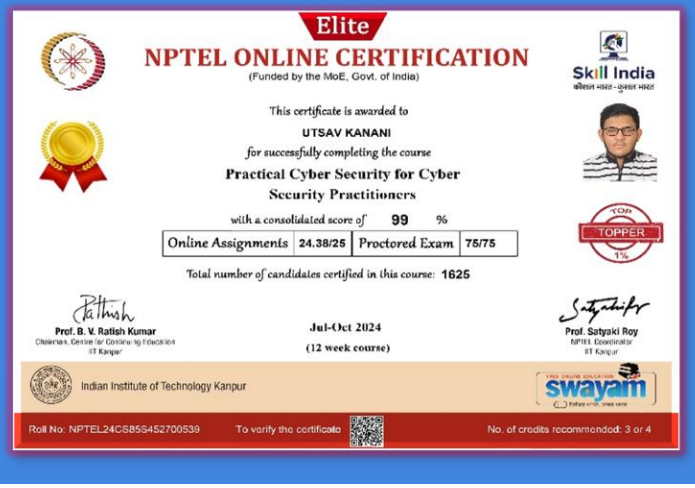


M. Tech II[nd] year students Sakshi Joshi and Utsav Kanani have cleared NPTEL course "Practical Cyber Security for Cyber Security Practitioners" with Topper ranking.

Sakshi Joshi (P23IS014)

Utsav Kanani (P23IS005)





STUDENT ACHIEVEMENTS

M. Tech II[nd] year student Susmit Deshpandey has cleared NPTEL course "Responsible & Safe AI Systems" with Topper ranking.

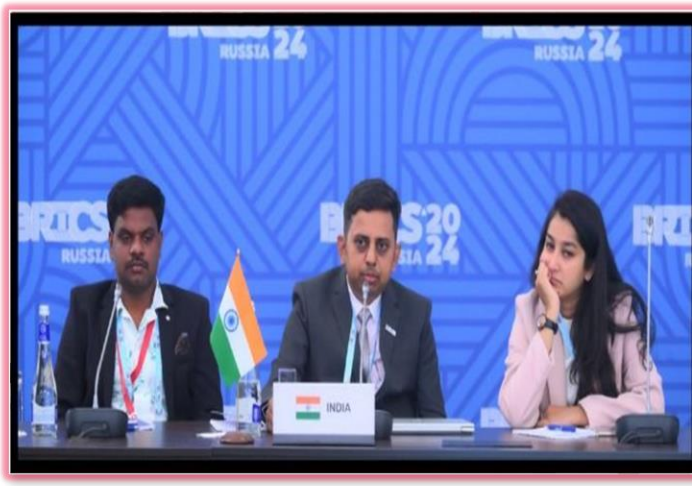
Susmit Deshpande (P23DS026)

M. Tech II[nd] year student Dev Kapadia Has cleared NPTEL course "Applied Accelerated Artificial Intelligence" with Topper ranking.

Dev Kapadia (P23IS006)

STUDENT ACHIVEMENTS

A delegation of Young Scientists from India participated in the 9th Young Scientist Forum of the BRICS 2024 which was held in Sochi, Russia during 25 to 29 November 2024. The PhD student of department of Computer Science and Engineering **Dr. Dilay Amarbhai Parmar**, Scientific / Technical Officer, Sardar Vallabhbhai National Institute of Technology, Surat was selected as one of the Young Scientists from India by the Department of Science and Technology (DST) under the Ministry of Science and Technology of the Government of India. Dr. Dilay Parmar presented his research on the topic of "Mitigating Location-Privacy Issues in Digital Humanities" considering the context of complying with privacy regulations of the BRICS and other nations under the "Digital Humanities" thematic area of the BRICS 2024 Young Scientist Forum. His active participation highlights our institution's commitment to fostering global scientific collaboration and innovation for advancing scientific dialogue.



STUDENT CHAPTER ACTIVITIES: ACM

Dr. Balu L. Parne, Faculty Co-chairperson of the SVNIT Surat ACM Student Chapter, along with Student Chairperson **Mr. Param Pathak (U22CS023)** and Secretary **Mr. Raj Vadodaria (U22CS077)** participated in the ACM India Chapter Summit on the 20th and 21st of December 2024. The event was hosted jointly by BMSCE and RVCE Bengaluru. The ACM India Chapter Summit, an annual event organized by the ACM India Council, serves as a platform to foster collaboration and networking among students and faculty coordinators from ACM chapters nationwide.

STUDENT CHAPTER ACTIVITIES: GDSC

During1st Oct- 1st Nov 2024 in the recent academic term, GDSC, SVNIT Surat conducted a series of impactful and engaging events. The Google Cloud Study Jam (GCSJ) was a standout achievement, where the club attained Tier 1 status, with 80 out of 120 participants successfully completing the campaign. The event not only equipped students with foundational knowledge of Google Cloud technologies but also emphasized practical applications, making it a resounding success.

Orientation: 15th Oct

The year began with the Orientation session, which attracted over 100 enthusiastic participants. The session served as a platform for students to exchange ideas, explore opportunities within the club, and integrate seamlessly into the GDSC community.

Machine Learning Workshop: 13th Nov 2024

The Machine Learning Workshop witnessed a record attendance of 150 participants. It offered a comprehensive learning experience, providing hands-on training in machine learning concepts and techniques. Participants left with practical knowledge and enhanced skills in predictive model development.

Tech Winter Break Session: 6th and 10th Dec 2024

During the winter break, GDSC organized the Tech Winter Break Session, focusing on web development and Flutter for cross-platform mobile app creation. This session enabled participants to explore real-world applications of these technologies, fostering innovation and technical excellence. These events underscore GDSC's dedication to empowering students through technical education, hands-on experience, and collaborative opportunities.

PHD COMPLETED

KHADE RASIKA GURURAJ (DS17C0004)

Defended her PhD thesis titled "Towards Designing a Robust Framework for Scale and Rotation Invariant Floor Plan Image Retrieval" in July 2024. She has worked under the supervision of Dr. Krupa Jariwala.

Ph. D. Viva-voce Date: 16th July 2024

DILAY PARMAR (DS17CO001)

Defended his PhD thesis titled "Investigating and Devising Location-Privacy Enhancing Techniques for Edge-Envisioned Environment." in October 2024. He has worked under the supervision of Dr. Uday Pratap Rao and Dr. Balu Parne.

Ph. D. Viva-voce Date: 10th October 2024

Currently Working as: Scientific / Technical Officer, Sardar Vallabhbhai National Institute of Technology, Surat

MATHE JOHN KENNY KUMAR (DS18CO001)

Defended his PhD thesis titled "Novel Algorithms for Mining Recency and Occupancy based High Utility Patterns" in November 2024. He has worked under the supervision of Dr. Dipti Rana.

Thesis Submission Date: 24th May 2024

Ph. D. Viva-voce Date: 11th November 2024

Currently Working as: Head of Department Artificial Intelligence and Machine Learning, Universal College of Engineering, Mumbai, Maharashtra

MAHAJAN PRANITA YOGESH (DS18CO004)

Defended her PhD thesis titled "Clinical Relation Modelling using Optimized Patient Embeddings from Unstructured Medical Records" in December 2024. She has worked under the supervision of Dr. Dipti Rana.

Thesis Submission Date: 23rd May 2024

Ph. D. Viva-voce Date: 3rd December 2024

Currently Working as: Sr. Data scientist, Relx-Elsevier

FACULTY ACHIVEMENT

Prof. Diren R. Patel, Professor, Department of Computer Science and Engineering, SVNIT has secured **2nd position in All India inter NIT faculty and staff tournament in badminton.**

Prof. Diren R. Patel, Professor, Department of Computer Science and Engineering, SVNIT attended the **International Conference on Binance Blockchain Week 2024** during October 30-31, 2024 at the **Coca-Cola Arena, AI Wasl, Dubai.**

SPONSORED PROJECTS

Project Title	"Utilizing UAVs Equipped with AI and ML Technologies for Rescue Operations in Flood-Affected Areas"
Principal Investigator:	**Dr. Partha Das (Assistant Professor, DoECE)**
Co - Investigator:	**Dr. Ritu Tiwari, Professor, DoCSE** **Dr. Abhilasha Chaudhuri, Assistant Professor, DoCSE**
Grant Sanctioned:	11.9672 Lakhs
Status:	Accepted
Duration:	8 months
Funding Agency:	TiHAN-IIT Hyderabad

Project Title	"Computational Techniques based investigation for Diabetic foot ulcers complications (CISMR)"
Principal Investigator:	**Dr. Chandra Prakash, Assistant Professor, DoCSE**
Objective:	The aim of the project is to explore Foot pressure plate and Thermogram Images for diabetic foot ulcer
Status:	Ongoing [2023-2025]
Duration:	Three (03) years or position is coterminous with the project.
Funding Agency:	DST- Science and Engineering Research Board (SERB) under EMEQ scheme, GoI

SHORT-TERM TRAINING PROGRAMMES ORGANIZED

Recent Advancement in Artificial Intelligence and Robotics 2024

8th – 13th July 2024

Chief Patron
Prof. Anupam Shukla
Director, SVNIT

Organizing Team
Dr. Chandra Prakash (DoCSE)

Dr. Praveen Chandaliya (DoAI)

Dr. Naveen Kumar (DoCSE)

Conveners
Prof. M. A. Zaveri,
HoD DoCSE, SVNIT

Prof. Ritu Tiwari,
HoD DoAI, SVNIT

The STTP successfully achieved its goals of enhancing participants' understanding and skills in AI and robotics. Feedback from attendees highlighted the value of practical sessions and insights from experts, contributing to their professional development and readiness to apply AI techniques in their respective fields.







The Short-Term Training Programme (STTP) on Recent Advancements in Artificial Intelligence and Robotics (RA-AIR-24) was organized by the Department of Computer Science and Engineering and Artificial Intelligence and technically sponsored by Computational Intelligence and Smart Motion Robotics Group at SVNIT Surat from 08-13 July 2024. The event aimed to delve into the transformative impacts of AI and robotics across various industries and foster practical learning in cutting-edge technologies. The event received an excellent response, with 45 participants participating online and offline. The primary objectives of the STTP were to:

- Educate participants on recent advancements in AI and robotics.
- Provide hands-on experience with Python, PyTorch, Keras, and other tools relevant to AI and robotics.
- Enhance participants' skills in areas such as deep learning, reinforcement learning, and explainable AI.
- Encourage interdisciplinary problem-solving using AI techniques.

INTERNATIONAL CONFERENCES ORGANIZED

International Conference on Information Security, Privacy and Digital Forensics

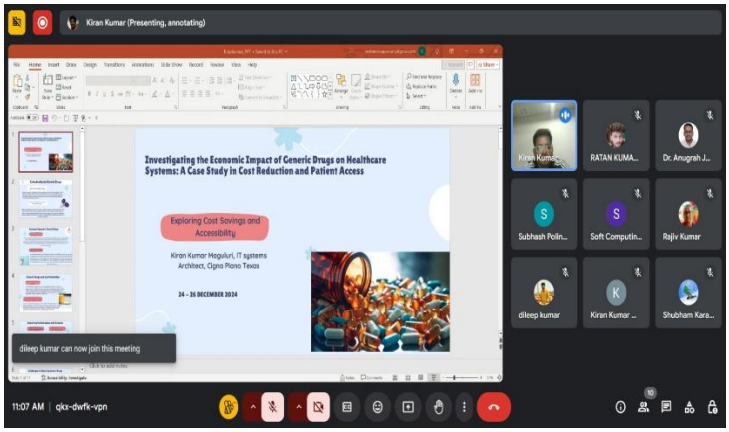
Third International Conference on Information Security, Privacy and Digital Forensics (ICISPD 2024) was jointly organized by SVNIT Surat, National Forensic Sciences University and NIT Goa during 18-19 October. ICISPD 2024 was hosted by NIT Goa. Total 37 papers were presented in the conference. The proceedings of the conference will be published by Springer in Lecture Notes in Electrical Engineering (LNEE) series.

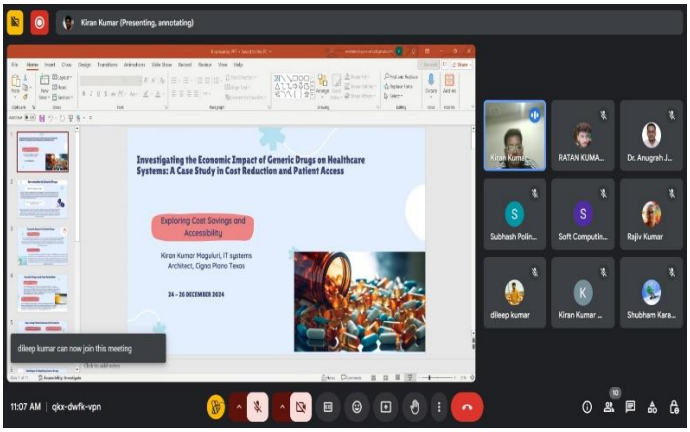
Sponsoring Agency:	National Forensic Science University	
Organizing Secretaries:	**Dr. Sankita Patel (DoCSE)**	**Dr. Bhavesh Gohil (DoCSE)**

INTERNATIONAL CONFERENCES ORGANIZED

5th International Conference on Computational Intelligence

Soft Computing Research Society, India and Department of Computer Science and Engineering, SVNIT, Surat have jointly organized the 5th International Conference on Computational Intelligence (ICCI 2024) Online and in person during December 24-25, 2024. The ICCI 2024 successfully brought researchers, academicians, industry, and government personnel together to share and discuss the various aspects of computational intelligence in engineering & technology. The conference witnessed multiple eminent keynote speakers from academia and industry from all over the world along with the presentation of accepted peer-reviewed articles.





BOOTCAMP

Bootcamp on "Advanced Threat Detection and Mitigation"

9^{th} – 13^{th} December 2024

Sponsoring Agency
Information Security Education and Awareness (ISEA),

Project Phase III by Ministry of Electronics and Information Technology (MeitY),

conducted by SVNIT, Surat

Faculty Coordinators
Dr. Sankita Patel (DoCSE)

Dr. Bhavesh Gohil (DoCSE)

The topics covered in the bootcamp were Advanced Malware and Mitigation Techniques, Fundamentals of MITRE ATTACK and defend framework, TTPs (Tactics, Techniques and Procedure), Password Cracking Techniques, Adversarial attacks in Deep learning models and Data Privacy issue in Deep learning models. On the last day of the bootcamp, a hackathon was conducted with exciting prizes. The participants were about 35 from various institutions.

The Department of Computer Science and Engineering conducted a Bootcamp on "Advanced Threat Detection and Mitigation" under the project "Information Security Education and Awareness (ISEA) phase III", a project funded by the Ministry of Electronics and Information Technology (MeitY). The Boot Camp was aimed to identify suspicious activities, unauthorized access, or malware within a system and how to minimize or eliminate risk once detected. The Bootcamp was inaugurated on 9th December, 2024 by Dr. M A Zaveri, Head of CSE, SVNIT and Chief Guest Shweta Daniel, ACP, Cyber Crime Cell, Surat.

The eminent speakers from various profound institutes/industries like Dr. Ashu Sharma (Cyber Security advisor in WatchGuard Technologies) , Dr. Akash Thakkar (Assistant Professor (IT), School of Applied Sciences, Engineering and Technology (SASET)), Mr. Ajinkya Lohakare (CTO & Founder of Social-Spectra & Ditto Security) and Dr. Vipul Kumar Mishra (Associate Professor, Gati Shakti Vishwavidyalaya) delivered the expert talks and shared their expertise in the field of Threat Analysis and Detection.

FACULTY DEVELOPMENT PROGRAM ORGANIZED

16th – 20th December 2024

Sponsoring Agency
Information Security Education and Awareness (ISEA),

Project Phase III by Ministry of Electronics and Information Technology (MeitY),

conducted by SVNIT, Surat

Faculty Coordinators
Dr. Sankita Patel (DoCSE)

Dr. Bhavesh Gohil (DoCSE)

The participants were about 53 from various academic institutions from Gujarat. Participants interacted with renowned academicians for their future endeavors. The overall organization of the programme was appreciated and the participants showed their interest to attend such programs at SVNIT in future.

FDP on
"Security and Privacy in Futuristic Technologies"

The Department of Computer Science and Engineering conducted a five days Faculty Development Programme (FDP), on "Security and Privacy in Futuristic Technologies" under the project "Information Security Education and Awareness (ISEA) phase III "a project funded by the Ministry of Electronics and Information Technology (MeitY). The FDP was aimed to upskill the knowledge of faculties / researchers in the domain of security and privacy concerns in the futuristic technologies like machine learning, Cloud Computing and Blockchain.

The distinguished speakers from a variety of prestigious institutions like Dr. Maniklal Das (DAIICT), Dr. Naveen Kumar Chaudhary (NFSU), Dr. Bhavesh Borisaniya (SSEC), Dr. Vipul Kumar Mishra (Gati Shakti Vishwavidyalaya), Dr. Virendra Singh (IIT Bombay) and experts from Lampros Tech Labs delivered the expert talks and hands – on and shared their expertise.

The topics covered in the FDP were Fundamentals of Information Security, Perspectives on Data Privacy and Protection, Artificial Intelligence Security, Privacy and Regulatory Concerns for Law Enforcement, Prediction of Money Laundering in Cryptocurrency using XAI, Malicious Activity Detection using VMI (Virtual Machine Introspection) in Cloud, Security in AI/ML, Blockchain Technology.

EXPERT TALKS DELIVERED

Dr. Sankita Patel Delivered Talk on “Privacy Preserving Techniques” at ATAL FDP on Cyber Security Techniques and Tools organized by SNPIT Institute, Bardoli during November 25-30, 2024.

Dr. Sankita Patel Delivered Talk on “Information Security Fundamentals” at FDP on “Security and Privacy in Futuristic Technologies” organized by Department of Computer Science and Engineering, SVNIT Surat during December 9-13, 2024.

Dr. Abhilasha Chaudhuri Delivered expert lecture on the topic "Case Study on Handling Highly Imbalanced Microarray Data" in an Online FDP on "Data Science and its Applications" from 15th to 26th June 2024. The FDP was jointly organized by NIT Raipur and NIT Warangal

Dr. Abhilasha Chaudhuri Delivered expert lecture on the topic “Advanced Techniques for Handling High Dimensional Data in Industry 4.0” on 25.09.2024; conducted by School of Engineering and IT, ARKA Jain University, Jamshedpur

EXPERT TALKS ORGANIZED

The Department organized the expert talk on the topic **"Machine Learning and Computer Vision in Industry"** on **September 18 – 2024** by **Mr. Nisarg Trivedi**. He is SVNIT alumnus and Qualcomm expert.

The Department organized the BMSEC on the topic **"Bridging the gap between software engineers & semiconductor industry"** on **October 17 – 2024** by **Nilesh Govande**. He has 17 years of experience in designing and developing embedded and storage products which includes cloud storage.

A Webinar on "PARAM Utkarsh Supercomputing facility (HPC System) for Research and Development" was jointly organized by Department of Computer Science & Engineering and Department of Artificial Intelligence, for CSE and AI students of B. Tech., M. Tech. and PhD on 22 August 2024. The online seminar was delivered by the expert **Ms. Divya MG, Scientist F, CPSF Group,** C-DAC, Bangalore.

BIS standards club at Department of Computer Science and Engineering, has conducted technical sessions on the topic "**Standardization-Basic Concepts**". These sessions were meant to spread awareness among students related to the basic concepts of standardization; Purpose of Standardization, marking and certification of articles and processes; Importance of standards to industry, policy makers, trade, sustainability and innovation. The sessions were organized on 24/08/2024 for B. Tech and 29/08/2024 for M. Tech students.

JOURNAL/CONFERENCE/BOOK PUBLICATIONS

K. Bhat, D. Jinwala, Y. Prasad, and M. A. Zaveri, “Addressing escalating threats: a secret image sharing scheme with adjustable threshold resilience against external adversaries and colluding participants,” International Journal of Communication Networks and Distributed Systems, 2024, doi:10.1504/IJCNDS.2025.10063445. (WoS Indexed)

K. Bhat, D. C. Jinwala, Y. Prasad, and M. A. Zaveri, "Siss-csa: Secret image sharing scheme with ciphertext-based share authentication for malicious model," Software: Practice and Experience, vol. 54, no. 12, pp. 2481–2501, 2024. (SCIE, WoS, Scopus indexed; Wiley publications)

V. H. Champaneria, M. A. Zaveri, and S. J. Patel, “A Secure Template Protection Technique for Robust Biometric Systems,” in proceeding of 8th Students Conference on Engineering and Systems (SCES), Prayagraj, India, (IEEE - SCOPUS) (Published- September 2024) DOI: 10.1109/SCES61914.2024.10652322.

V. Rathod, D. Rana, and R. Mehta, "Road Crack Detection and Classification Using UAV and Deep Transfer Learning Optimization", International Journal of Indian Society of Remote Sensing, 24 Dec. 2024. https://doi.org/10.1007/s12524-024-02075-x (Science Citation Index Expanded (SCIE), Scopus)

M J. K. Kumar, Chintan Rajput, Dipti Rana, "D-HUP Tree: Distributed HUP Tree for Scalable High Utility Itemset Mining", International Journal of Data Mining, Modelling and Management, Inderscience Publisher, Accepted: Nov. 2024. (Web of Science, ESCI, Scopus) (0.4) (ACCEPTED)

V. Rathod, Dipti P. Rana, Rupa G. Mehta & Vijay Nath, "A Computer Vision Approach to Vehicle Detection, Classification, and Tracking from UAV Data for Indian Traffic Analysis", IETE Journal of Research, Taylor and Francis, pp. 1-14, 19 Jul 2024.

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Department of Computer Science and Engineering
Sardar Vallabhbhai National Institute of Technology
Ichchhanath, Surat – 395007

Newsletter Design Committee: Dr. Abhilasha Chaudhuri, Karishma A. Patel