



SVCE Sri Venkateswara
College of
Engineering



**ONE-WEEK ONLINE FACULTY DEVELOPMENT PROGRAMME
ON**

"RECENT TRENDS IN NETWORK SECURITY"

08/03/2022 - 12/03/2022

Organized by

Department of Electronics and Communication Engineering

In Association with

IETE Chennai Centre



CHIEF PATRON

Dr. M Sivanandham, Secretary, SVCE

PATRON

Dr. S Ganesh Vaidyanathan, Principal, SVCE

**Dr. S. Muthukumar, Professor & Head,
Dept of ECE, SVCE**

Convenor:

**Dr. N. Venkateswaran, Chairman,
IETE Chennai Centre**

Mrs. T.J. Jeyaprabha,

Honorary Treasurer, IETE Chennai Centre

Coordinators:

Dr. G.A.Sathish Kumar, Professor/ECE, SVCE

Mrs. K.S. Subhashini, Assistant Professor/ECE, SVCE

Mrs. R. Kousalya, Assistant Professor/ECE, SVCE

Mrs. B. Sarala, Assistant Professor/ECE, SVCE

Dr. A. Prasanth, Assistant Professor/ECE, SVCE

Registration Fee:

Nil (IETE Members)

Rs. 100/- (Non-IETE Members)

Contact Details:

Mrs. T.J. Jeyaprabha

jprabha@svce.ac.in and +91-9840742022



SRI VENKATESWARA COLLEGE OF ENGINEERING

Department of Electronics and Communication Engineering

Submitted to the Principal,

Through HoD-ECE,

Date: 25-02-2022

As part of the co-curricular activities, the Department of ECE in association with **IETE, Chennai Centre** proposes to conduct a One-week Online Faculty Development Programme on "**Recent Trends in Network Security**" from 08-03-2022 to 12-03-2022. The FDP is intended to give insights into current and future perspectives of Network Security to the research scholars and faculty members.

The registration fee is free for IETE members whereas the registration fee of Rs.100/- will be collected from non-IETE members. These registration fees will be utilized for honoring the IIT speakers. The expected participants are around 50 (30 IETE members and 20 non-IETE members). The expenditure is supported by IETE, Chennai Centre.

The FDP is coordinated and organized by the team comprising Dr.G.A.Sathish Kumar, Mrs.T.J.Jeyaprabha, Mrs.K.S.Subhashini, Mrs.R.Kousalya, Mrs.B.Sarala, and Dr.A.Prasanth. I hereby attached the FDP flyer and Schedule for your kind reference. We kindly request you to approve this proposal for conducting the FDP.

Thanking you,

forwarded to principal
for approval.
G.A.Sathish Kumar
25/02/22.

Yours Faithfully,

G.A.Sathish Kumar
25/2/22
(Dr.G.A.Sathish Kumar)

To: HoD-ECE
Approved
25/2



SVCE Sri Venkateswara
College of
Engineering



Department of Electronics and Communication Engineering
A Report on 5 days Faculty Development Programme on
“Recent Trends in Network Security “ – 08/03/2022 – 12/03/2022

CHIEF PATRON

Dr. M Sivanandham, Secretary, SVCE

PATRON

Dr.S Ganesh Vaidyanathan, Principal, SVCE

Dr. S. Muthukumar, Professor & Head,

Dept of ECE, SVCE

CONVENOR

Dr. N. Venkateswaran, Chairman,

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Honorary Treasurer, IETE Chennai Centre

IETE - SF Coordinator, SVCE

COORDINATORS

Dr.G.A.Sathish Kumar, Professor/ECE, SVCE

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Mrs.R.Kousalya, Assistant Professor/ECE, SVCE

Mrs.B.Sarala, Assistant Professor/ECE, SVCE

Dr.A.Prasanth, Assistant Professor/ECE, SVCE

Objective:

The FDP aims to provide a premier inter-disciplinary platform for researchers, practitioners and educators to discuss Recent Trends in Network Security as well as practical challenges encountered and solutions adopted in the fields of Cyber Security, Security in the context of Internet of Things, Block Chain, Modern cryptographic techniques as well as hardware security concepts, Applications of AI in prevention of security attacks and future research directions in Quantum Computing. The objectives are:

- To update the participants with the state-of-the-art technologies in cybersecurity and approaches in IoT
- To introduce Quantum Computing and its role in cyber security
- To promote an understanding of different types of security attacks.
- To gain in-depth knowledge about block chain technology.
- To demonstrate Client Security tools

Topics :

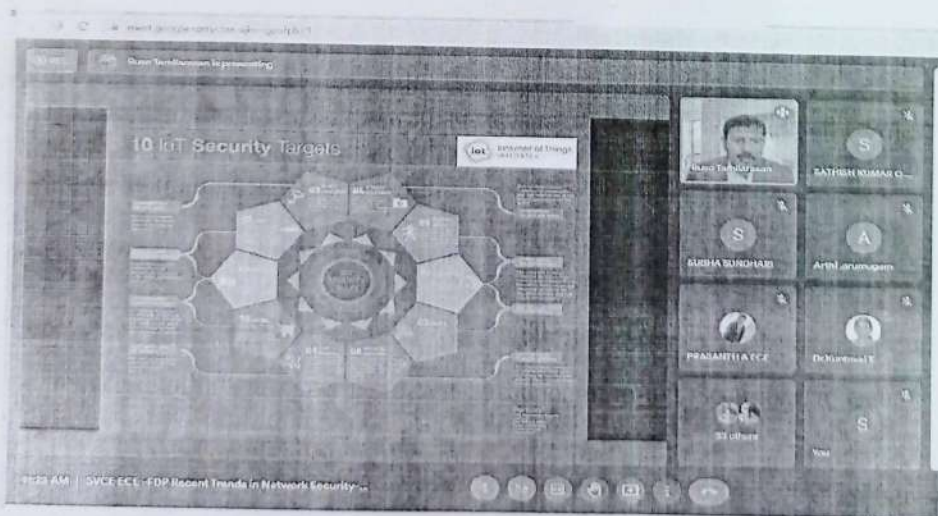
- Introduction to IoT Security
- Advanced Side Channel Analysis
- Role of Quantum Computing in Cyber Security
- Design, Analysis and Implementation of Physically Unclonable Function based Authentication Frameworks for IoT
- Homomorphic Encryption - Directions and Challenges
- Hands on session (Client Security Tools)
- Auth and Trace in Blockchain
- AI for Network Security
- The Rise of Ransomware Attacks
- Current Research in Network Security

The FDP on Recent Trends in Network Security was inaugurated on 08/03/2022 with the welcome address delivered by Dr.S.Muthukumar,HoD/ECE, special address by Dr.N.Venkateswaran ,Chairman IETE Chennai Centre and Inaugural Address by Dr.G.A.Sathish Kumar ,Prof/ECE.The FDP had around 60 participants from across various institutions.

Session 1 : Introduction to IoT Security

Speaker : Dr.Ruso Tamilarasan, Advisory System Analyst,IBM India Pvt Ltd

Dr.Ruso delivered an invigorating lecture on Introduction to IoT Security. He elaborated on the impact of Internet of things and its applications across multiple domains. He had explained the IOT edge architecture, various protocols for implementation of IOT and notable IOT security breaches,IOT security standards and legislation. He had also illustrated Authentication Architecture for Security in IOT.

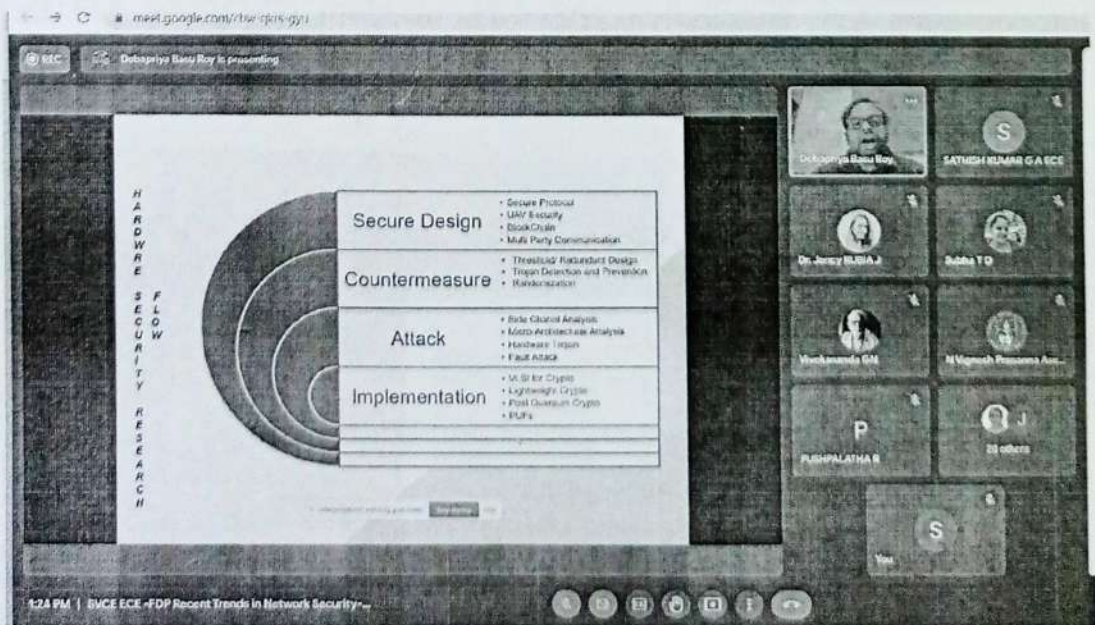


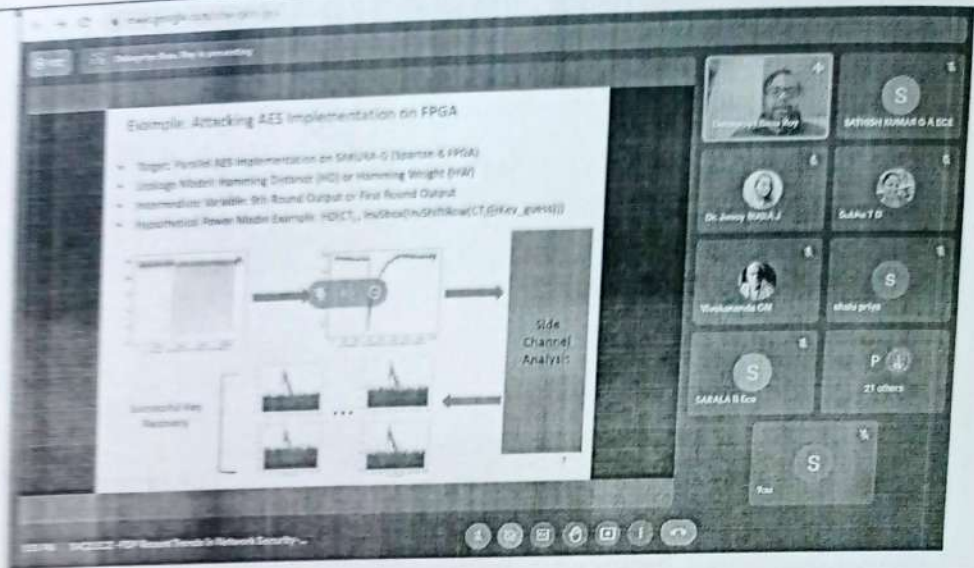


Session 2 : Advanced Side Channel Analysis

Speaker: Dr. Debapriya Basu Roy, Department of CSE, IIT Kanpur

Dr. Debapriya Basu elucidated on Cryptography, Hardware Security, Classical crypt analysis and side channel attacks. Dr. Basu explained with example the attack on AES implementation on FPPA, various metrics for evaluation of side channel attack analysis, Detection of leakages and demonstrated a hybrid side channel testing mechanism with a tool that was developed in collaboration with IIT Kharagpur. He also explained the recent trends in utilization of machine learning for side channel analysis.

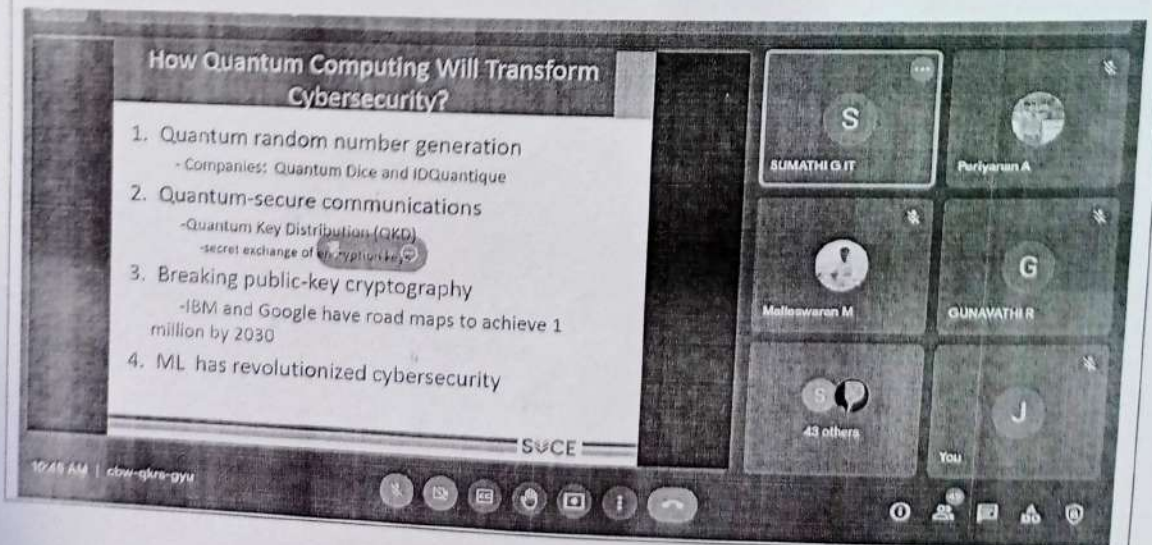


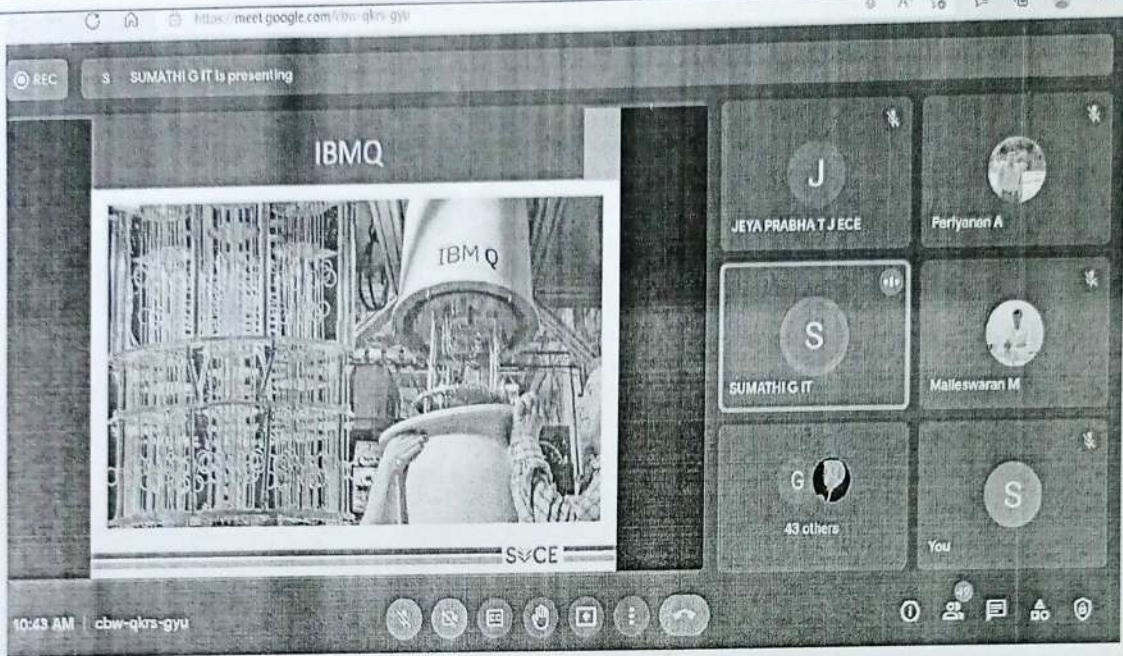


Session 3: Role of Quantum Computing in Cyber Security

Speaker : Dr.G.Sumathi,Prof/TNT,SVCE

Quantum computing has a significant and game-changing impact on cybersecurity. Dr. Sumathi gave a lucid explanation on concepts of Quantum Computing (QC), differences between Classical computers and Quantum Computers, Domain Applications and industry leaders in QC. She had also explained how Quantum Computing will transform cyber security, and the trends in R&D in developing Quantum computers. She had elaborated on how quantum computers can even break the most widely used RSA encryption, quantum key distribution protocols, quantum encryption and post quantum encryption. She gave insights on the challenges in Quantum computing and how it is critical to network security.

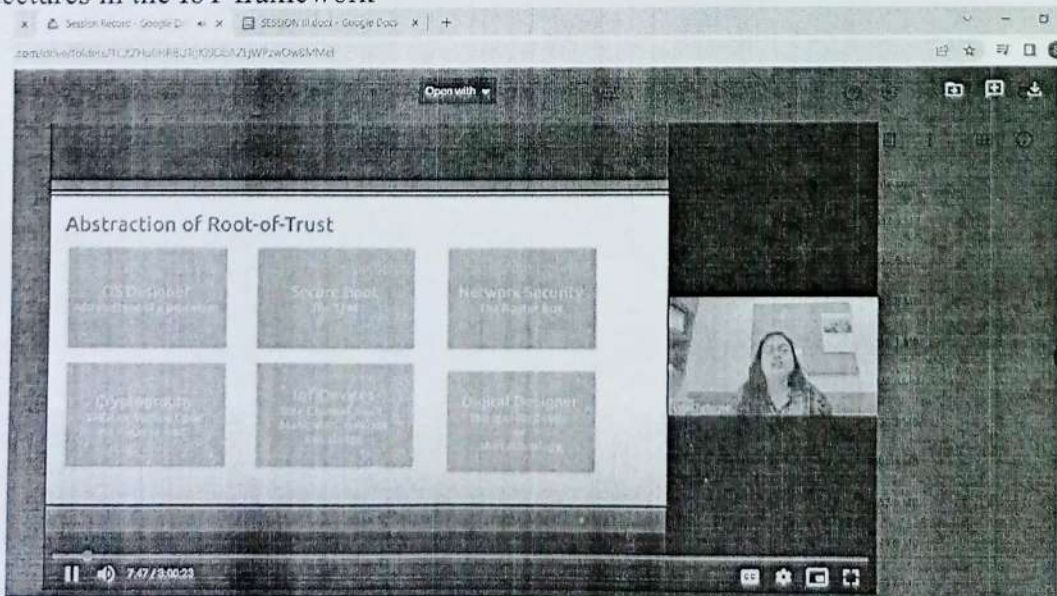


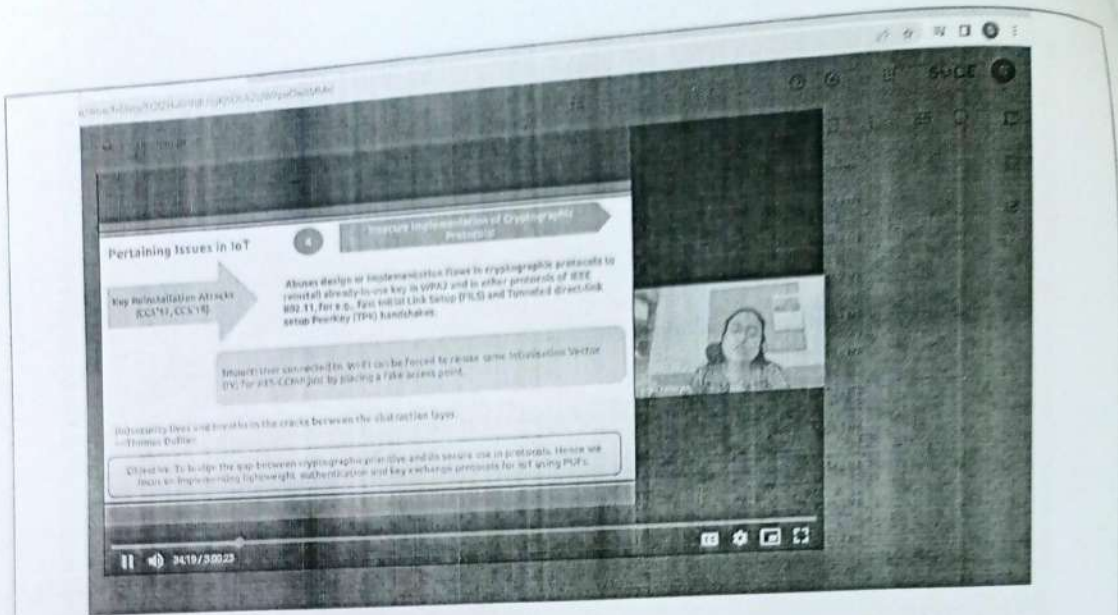


Session 4: Design, Analysis and Implementation of Physically Unclonable Function(PUF) based Authentication Frameworks for IoT

Speaker : Dr.Urbi Chatterjee,Assistant Professor/CSE,IIT Kanpur

Dr.Urbi explained the Abstraction of Root-of-trust in the context of IoT ,role of hardware security, the different issues pertaining to IoT,need for PUF and its phases that include enrolment, authentication & key sharing phase and secure communication phase.She had also elaborated on the development of a light weight protocol applicable to hierarchical architectures in the IoT framework





Session 5 : Homomorphic Encryption - Directions and Challenges

Speaker : Dr.K.R.Ramkumar, Associate Professor/CSE ,Chitkara University, Chandigarh

Dr.K.R.Ramkumar explained in detail the Concepts in Homomorphic Encryption and the various cryptographic solutions to preserve privacy in Cloud Communication. He discussed the categories in Homomorphic encryption such as partially HE, Somewhat HE and fully homomorphic encryption and demonstrated the Integer Based Fully homomorphic Encryption as a case study. He had elaborated the challenges in utilising homomorphic encryption for commercial purposes.

Integer Based (DGHV) – Case Study

$P=5, Q=7, R=5$
 $m1=5 \ \& \ m2=6$
 $m1=101$
 $m2=110$

$C(1) = p * q + 2 * r + m \quad 35 + 2 * 5 + 1 = 46$
 $C(0) = p * q + 2 * r + m \quad 35 + 2 * 5 + 0 = 45$
 $C1 = 46 \ 45 \ 46$
 $C2 = 46 \ 46 \ 45$

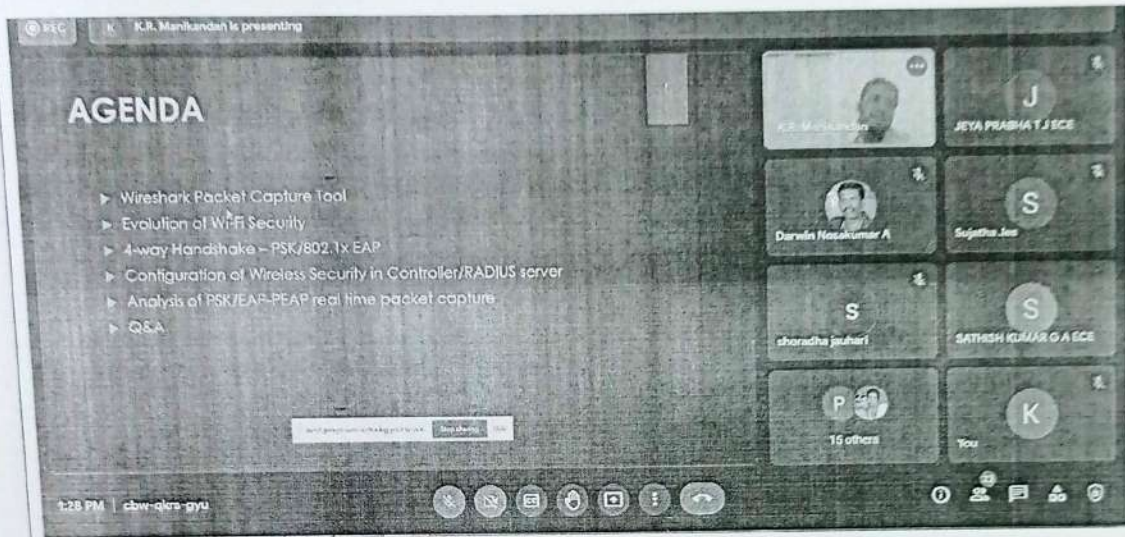
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Session 6: Hands on session (Client Security Tools)

Speaker: Mr.K.R.Manikandan, Technical Lead, EmbedUR Systems Pvt Ltd

Mr.Manikandan , our alumnus from 2016 batch of ECE gave hands on demo on Wireshark,

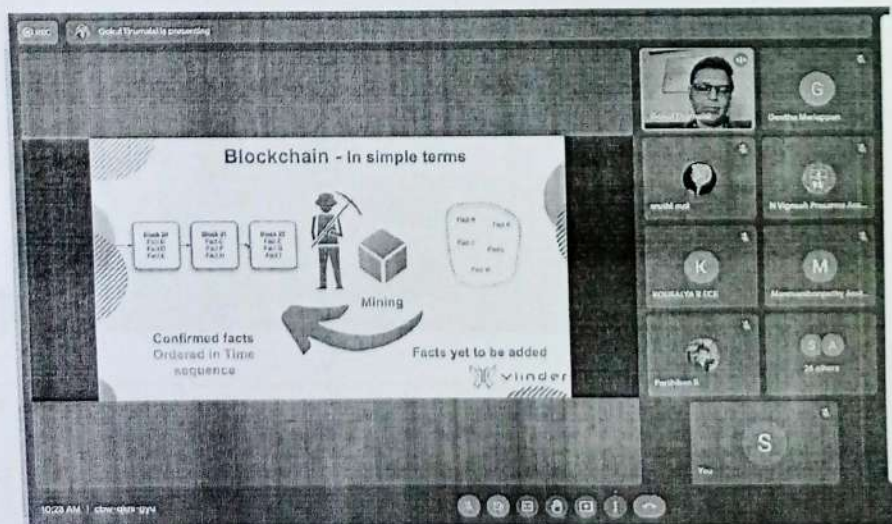
Packet capture tool. Wireshark is the de facto application tool to capture and investigate network traffic. He explained Extensible Authentication protocol and 802.1X which is a port access protocol for protecting networks via authentication and he showed how it is extremely useful in the Wi-Fi environment. He also demonstrated the configuration of the Remote Authentication Dial in User Service (RADIUS) to enhance Network security.



Session 7: Auth and Trace in Blockchain

Speaker : Mr.Gokul Tirumalai,Senior Director, Marketing & Communication,Vlinder Labs Pvt Ltd,Bengaluru

Mr.Gokul Tirumalai delivered an invigorating lecture on Block chain technology by explaining how a shared, immutable ledger facilitates the process of recording transactions and tracking assets in a business network. He had explained in detail the actors and various steps involved in Block chain Traceability and demonstrated TRAG – an Auth and trace tool developed for a distillery industry as use case.

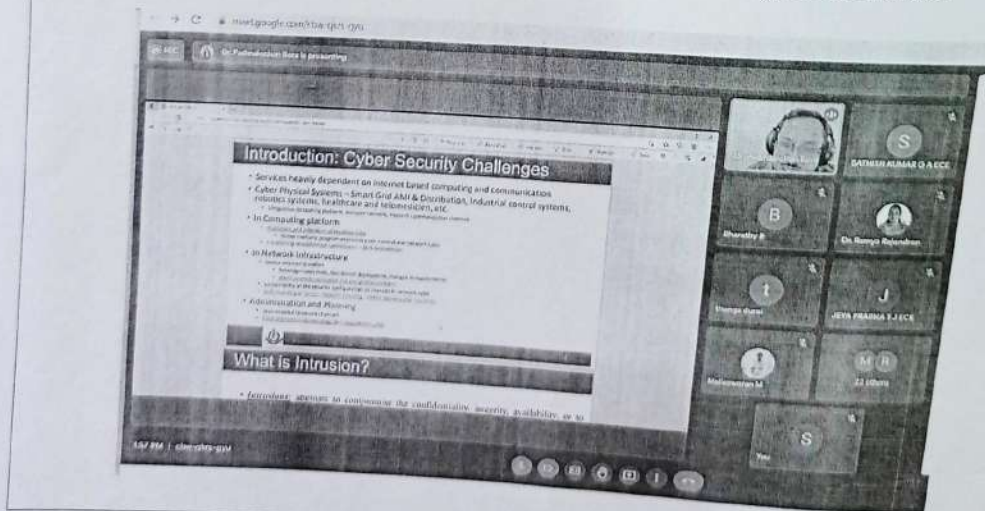


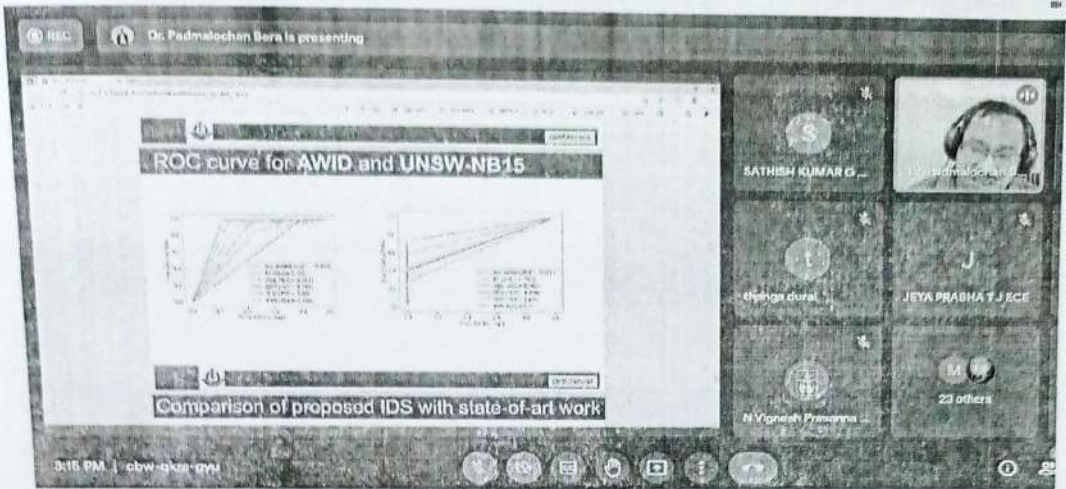


Session 8: AI for Network Security

Speaker : Dr.Padmalochan Bera,Assistant Professor/CSE,IIT Bhubaneswar

Dr.Padmalochan Bera, elaborated on Machine learning and its application in Cyber Security from an Intelligent Intrusion Detection perspective. He also discussed about various solutions to prevent Intrusion detection and prevention. He discussed the state of the art research work carried out in analysing the performance of various ML based classifiers such as Random Forest,Gaussian Naïve Bayes ,Decision trees ,KNN on different types of attacks.





Session 9: The Rise of Ransomware Attacks

Speaker : Dr.N.M.Balamurugan,Associate Professor/CSE,SVCE

Dr.Balamurugan delivered an interesting lecture on ransomware ,a type of malware that is designed to encrypt files on a device and rendering the system unusable at the end.He elaborated on types of ransom ,targets of crypto-ransomware and how it effects people by taking a case study in UK.He also explained methods to detect affected systems and preventive measures. He cited many real time scenarios such as solar wind attack and nation state hacks.

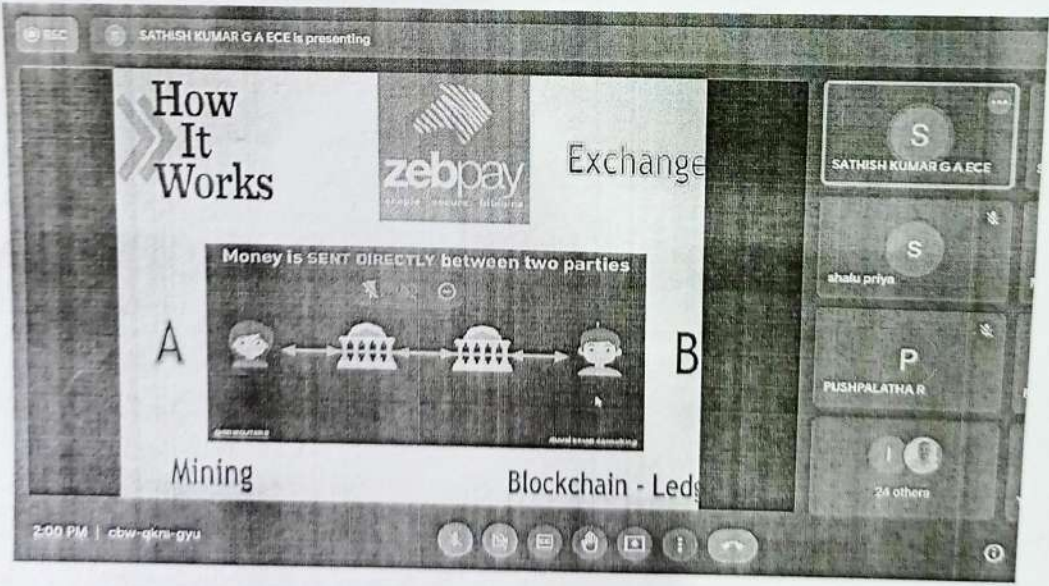
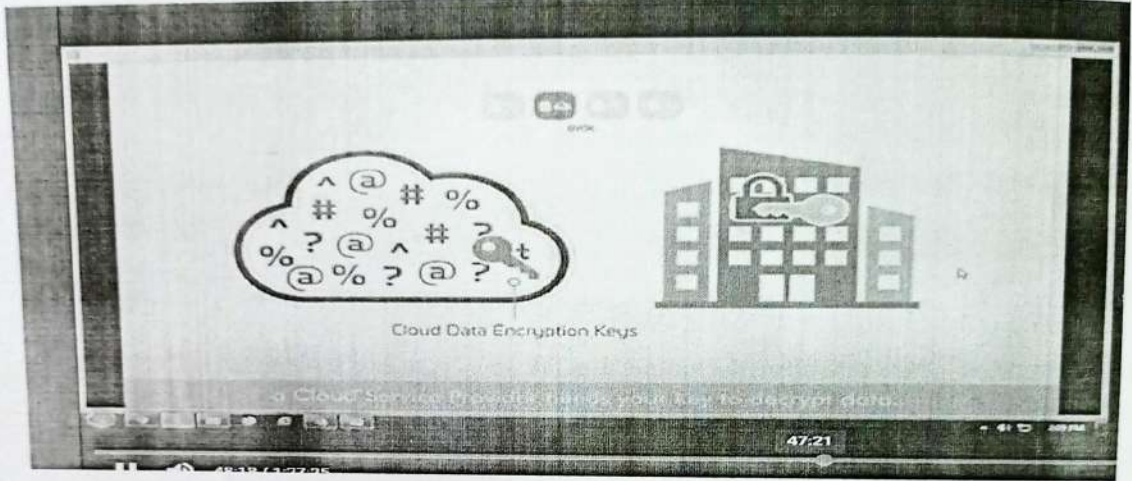


Session 10 :Current Research in Network Security

Speaker : Dr.G.A.Sathish Kumar,Professor/ECE,SVCE

Dr.G.A.Sathishkumar delivered an insightful lecture on current research in network security

that included Key management, Design and development of key exchange mechanism using elliptic curve cryptography and Tokenization for Contactless payments on Commercial Off the shelf system (CPOC) standard. He had also explained security in Bitcoin, Rainbow tables, Stream ciphers Salsa20 and ChaCha20 and secret multiparty computation with interesting real time examples.



[Handwritten Signature]
Coordinator

[Handwritten Signature]
HoD

Five - Days FDP on Recent Trends in Network Security

Participants Details

S.no	Salutation	Name of the faculty	Designation	Institution Name
1	Dr	Jitendra Singh	Associate professor	SRM Institute of Science and Technology, GHIAZIABAD
2	Mr	P. PARUTHI ILAM VAZHUTHI	Assistant Professor	V.R.S College of Engineering and Technology
3	Dr	G N VIVEKANANDA	Assistant Professor	Madanapalle Institute of Technology & Science
4	Mrs	SRUTHI MOL	Assistant Professor	KGISL Institute of Technology
5	Dr	S.VIJAYPRASATH	Associate professor	PSNA College of Engineering and Technology
6	Ms	T.D.SUBHA	Assistant Professor	R.M.K. Engineering College
7	Mrs	R.Poornima	Assistant Professor	K.S.Rangasamy College of Technology
8	Dr	Gunavathi	Associate Professor	Christ University
9	Mr	Darwin Nesakumar A	Assistant Professor	R.M.K.Engineering College
10	Dr	S.LAVANYA	Professor	Muthayammal Engineering College
11	Mr	M. VIGNESH	Assistant Professor	Dr Mahalingam College of Engineering and Technology
12	Dr	JENCY RUBIA J	Assistant professor	K Ramakrishnan College of Engineering
13	Mr	Aanandha Saravanan K	Associate Professor	Veltech Rangarajan Dr.Sagunthala R&D Institute of Science and Technology
14	Mr	N.Vignesh Prasanna	Associate Professor	Vel Tech Rangarajan Dr.Sagunthala R&D Institute of Science and Technology
15	Ms	SANGEETA SHARMA	Assistant professor	Arya College of Engineering and Information Technology
16	Dr	SATHESH RAAJ R	Assistant Professor	PSNA College of Engineering and Technology
17	Dr	R.Ramadevi	Associate Professor	Saveetha School of Engineering
18	Dr	M.MALLESWARAN	Assistant professor	UCE KANCHIPURAM
19	Ms	N BACKIYALAKSHMI	Assistant Professor	KGISL Institute of Technology

20	Mr	Vinayakumar Chikaraddi	Assistant Professor	BLDEA's A S Patil College of Commerce Autonomous Vijayapur
21	Ms	Monisha.K	Assistant Professor	Sri Krishna College of Technology
22	Mr	J Sakubar Sadiq	Associate Professor	Syed Ammal Engineering College
23	Mr	A PERIYANNAN	Associate Professor	Sri Ranganathar Institute of Engineering and Technology
24	Ms	SHERADHA JAUHARI	Assistant Professor	ABES Institute of Technology, GHAZIABAD
25	Ms	R BHARATHY	PROFESSOR (SS)	RAJALAKSHMI Engineering College
26	Ms	J.SWORNA JO LIJHA	Assistant Professor	Arunachala College of Engineering for Women
27	Mrs	Gowsalya S	Assistant professor	St Joseph College of Engineering
28	Mrs	Lavina balraj	Assistant professor	St.Joseph College of Engineering
29	Mr	M.THANGADURAI	Assistant Professor	ARUNAI Engineering College
30	Mrs	S. Saravana	Assistant professor	Bharath Institute of Higher education and research
31	Mrs	VINUDEVI G	Assistant Professor	Bharath Institute of Higher Education and Research
32	Dr	K.Yogitha	Assistant Professor	Arunai Engineering College
33	Dr	Mithra K	Assistant Professor	Saveetha Engineering College
34	Ms	SARANYA G	Assistant Professor	RAJALAKSHMI Engineering College
35	Mrs	T J Jeyaprabha	Associate Professor	Sri Venkateswara College of Engineering
36	Ms	Diksha Chawla	Assistant Professor	PDM University
37	Mrs	SUBHASUNDARI P	Assistant Professor	Muthayammal Engineering College, Rasipuram
38	Mrs	Sreeharini Murugesan	Research scholar	Amrita Vishwa Vidyapeetham
39	Dr	R.Remya	Assistant professor	Dr.NGP Institute of technology
40	Ms	Suganya Jeyaparakash	Assistant Professor	CMR Institute of Technology, BANGALORE
41	Dr	A.RAJA	Associate Professor	Saveetha School of Engineering
42	Dr	Esther Rani P	Professor	Vel Tech Rangarajan Dr.Sagunthala R&D Institute of Science and
43	Mr	M.Manimaraboopathy	Assistant Professor	Vel Tech Rangarajan Dr.Sagunthala R&D Institute of Science and
44	Mr	BABU M	Assistant Professor	R.M.K. College of Engineering and Technology
45	Dr	K.P.INDIRA	Associate Professor	Saveetha School of Engineering

Saveetha School of Engineering		Associate Professor	
46	Dr	Samuel Rajesh Babu R	Associate Professor
47	Dr	Shakthi Murugan K H	Assistant Professor
48	Mr	Rajagopal R	Assistant Professor
49	Mr	Boobalan.J	Research scholar
50	Ms	Anusooya S	Assistant Professor
51	Mrs	W.NANCY	Assistant Professor
52	Dr	Roopali lolage	Professor
53	Mrs	G.SUIATHA	Assistant Professor
54	Dr	Geetha R	Associate professor
55	Mrs	M SHALUPRIYA	RESEARCH SCHOLAR
56	Mrs	R Pushpalatha	Research Scholar
57	Dr	Arthi A	Associate Professor
58	Dr	Venmathi A R	Associate Professor
59	Dr	K G SATHIYA	Associate Professor
60	Dr	P.Prabhavathy	Assistant Professor
61	Mr	PARTHIBAN S	Asst. Prof.
62	Mr	SADIQ BASHA.G	Associate professor
63	Mrs	V. Gandhimathi	Associate professor
64	Mrs	T.PRIYADARSINI	Assistant Professor
65	Mr	R BALASUBRAMANIYAN	Associate Professor
66	Ms	S.Jayachitra	Assistant Professor
67	Mr	P.Muthukumarar	Assistant Professor
		IETE Member	19
		Non-IETE Member	48
		Total	67


Coordinator


HOD

Sri Venkateswara College of Engineering

Sri Manakula Vinayagar Engineering College

RMK College of Engineering and Technology

University college of engineering kancheepuram

B S Abdur Rahman Crescent Institute of Science and Technology

JEPPIAAR Institute of Technology

Shree L.R Tiwari college of Engineering Thane

ARUNAI Engineering College

Saveetha School of Engineering

Saveetha School of Engineering

Saveetha School of Engineering

R.M.K. Engineering College

Kings Engineering College

ARUNAI Engineering College

SRM Institute of Science & Technology, Vadapalani

VRS College of Engineering and Technology

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V.R.S. College of Engineering and Technology

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PSNA College of Engineering and Technology



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RECENT TRENDS IN NETWORK SECURITY

Certificate of participation

This is to certify that

P.Prabhavathy

of SRM Institute of Science & Technology, Vadapalani

has participated in the Five-Days Online Faculty Development Programme on "Recent Trends in Network Security" organised by the Department of Electronics and Communication Engineering in association with IETE Chennai Centre from 8th March 2022 to 12th March 2022.

Dr. N. VENKATESWARAN
CHAIRMAN, IETE CHENNAI CENTER

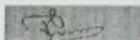
Dr. G. A. SATHISH KUMAR
EVENT COORDINATOR

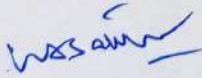
Dr. S. MUTHUKUMAR
HOD - ECE

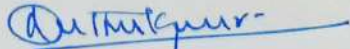


SRI VENKATESWARA COLLEGE OF ENGINEERING
 FEEDBACK FROM THE SPEAKER - GUEST LECTURE

DEPARTMENT : Electronics and Communication Engineering

Name of the Speaker	: Dr.Ruso Tamarasan
Designation	: Advisory System Analyst
Institution/University/Organisation	: IBM India Private Limited, Chennai
Mobile / E-mail	: racingruso@gmail.com
Title of the Lecture	: Introduction to IoT Security
Date	: 08/03/2022
Time	: 10 am - 11.30 am
Venue	: https://meet.google.com/cbw-qkrs-gyu
Comments by the Speaker	: I would like to the management, Director, Dean, HOD and the coordinators for providing me such a wonderful opportunity to take the lecture on Introduction to IoT Security. It was a nice arrangement. I request you to conduct many more FDP like this.
Suggestions for improvement	: Nil
Signature of the Speaker	: 


 Signature of Coordinator


 Signature of HOD