

Report

Expert Lecture

(Session: - 2022-23)

Topic of Talk: Deployment of critical Infrastructures in industrial internet Of things (IIOT) using fog computing and zero-trust model

Resource Person Name and Affiliation: - **Dr. Priyadarsi Nanda**, Director, Cyber security Program School of Electrical and Data Engineering. Faculty of Engineering and IT, University of Technology Sydney (UTS), Australia

Date: - 04/02/2022

Time: 10:30 am - 11:00 am

Link of the Session:- <https://meet.google.com/dzy-wpwq-aoc>

No. of Participant:- 84

Summary of the keynote session:-

- Prof Nanda, mainly explores the following three modern different technology paradigms Fog computing, Block chain and Zero-Trust model.
- He has talked about the different Privacy Issues of Block chain for Industrial Internet of Things.
- He has also discussed the Zero-Trust Framework.
- He also shown the Block chain operations on node N3 terminal.

Screenshots of the Session:-

The screenshot shows a Google Meet interface. On the left, a presentation slide titled "IIoT" is displayed. The slide content includes:

- IIoT involves the replacement of currently deployed Industrial Control Systems (ICS) environments with smarter and more interactive devices to communicate with next-generation IT systems.
- Industry 4.0 is the fourth industrial revolution which supported the concept of IIoT driven by artificial intelligence (AI), advanced automation and data analytics [Libow, 2016].
- These systems require real-time interactions between devices in order to function without any issues. Any errors occurring in these environments can have significant physical consequences [Nazir, 2017].

Below the text is an image of industrial machinery labeled "INDUSTRY 4.0".

On the right side of the Meet window, a grid of participants is visible, including:

- Priyadarsi Nanda (presenting)
- Nikhil Bhatnagar
- Priyanka Sharma
- Dr. Pankaj Dadheech
- nandini babbar
- Dr. Yogesh Kumar ...
- Rajesh Rajaan
- 3 others
- You

The bottom status bar shows the time as 9:18 AM and the session ID as dzy-wpwq-aoc.

The screenshot shows a Google Meet interface. On the left, a presentation slide titled "Privacy Issues of Blockchain for Industrial Internet of Things" is displayed. The slide content includes:

- Internal Threats
 - T1 - A malicious insider can gain access to all the interactions occurring in a network.
- External Threat Attacks
 - T2 - A node can be compromised by a malicious actor.
 - T3 - A malicious attacker may exploit vulnerabilities in existing deployed smart contract.
 - T4 - A malicious attacker may find some sensitive/secret information exposed in the transactions and/or the smart contracts.
 - T5 - A malicious attacker may also compromise a blockchain node admin.

Below the text is a "Risk Analysis Table" with columns for Threat ID, Likelihood, Consequence, and Termination/Prevention. The table lists threats T1 through T5 with corresponding risk levels.

On the right side of the Meet window, a grid of participants is visible, including:

- Dr. Sarabjeet Singh...
- Nikhil Bhatnagar
- Priyanka Sharma
- Dr. Pankaj Dadheech
- nandini babbar
- Priyadarsi Nanda (presenting)
- 5 others
- You

The bottom status bar shows the time as 9:39 AM and the session ID as dzy-wpwq-aoc.

GROUP PHOTOGRAPH

