



IAC 7.0

TALKS

ARTIFICIAL INTELLIGENCE (AI) , MACHINE LEARNING AND CYBER SECURITY

19 - 20 SEPTEMBER 2025



Industry-Academia Conclave 7.0

APPLICATIONS OF MACHINE LEARNING IN DETECTION OF MONEY LAUNDERING



SPEAKER

MR MANOJ APTE

Principal Scientist
TCS Consultancy
Services

DATE

19 SEP, FRIDAY

TIME

11:15AM-11:45AM

VENUE

A01-007



APPLICATIONS OF MACHINE LEARNING IN DETECTION OF MONEY LAUNDERING

ABSTRACT

This talk provides a thorough examination of money laundering (ML) and anti-money laundering (AML) mechanisms, along with effective strategies for detecting and preventing fraudulent activities. It delves into the role of shell companies in ML schemes and explores methods for detecting them, including the use of a Banking Transactions Simulator and anomaly detection techniques.

The presentation highlights three key pillars in the fight against money laundering: Know Your Customer (KYC)/Customer Due Diligence (CDD), Watchlists, and Transaction Monitoring. It also features a case study on transaction monitoring from the SWIFT hackathon and discusses the application of federated learning to enhance machine learning models for addressing data pooling challenges.

Overall, this presentation offers a comprehensive and insightful exploration of the complexities involved in fraud and money laundering detection, providing valuable strategies and methodologies for combating these financial crimes.



INDUSTRY-ACADEMIA CONCLAVE 7.0

Hacking the Fast Lane: Exploring Automotive Cybersecurity Threats and Defenses



DATE
19 SEP, FRIDAY

TIME
11:50AM - 12:20PM

VENUE
A01-007

Mr. Anish T.S.

*Head, CyberSecurity
Bosch Global Software
Technologies Pvt Ltd*



HACKING THE FAST LANE: EXPLORING AUTOMOTIVE CYBERSECURITY THREATS AND DEFENSES

ABSTRACT

As modern vehicles become increasingly connected, the line between cars and computers continues to blur. With infotainment systems, over-the-air updates, Bluetooth, and even internet connectivity, cars are now part of the Internet of Things — and just as vulnerable. This talk dives into the world of automotive cybersecurity, demonstrating how attackers can exploit vulnerabilities in vehicle systems to gain unauthorized access, manipulate behavior, and even control critical functions remotely. We'll explore real-world case studies, dissect common attack vectors such as CAN bus injection, ECU spoofing, and wireless exploitation, and examine how these threats have evolved alongside automotive technology. The talk will also cover tools and techniques used by both attackers and defenders, as well as the challenges in securing embedded systems in vehicles. Whether you're a security researcher, developer, or car enthusiast, you'll come away with a deeper understanding of the risks — and the steps being taken to keep our vehicles secure on the road ahead.



Industry-Academia Conclave 7.0

DATA DRIVEN INDUSTRIAL PROBLEMS : STATISTICAL APPROACH



SPEAKER

DR. ARINDAM PANJA

Senior Data Scientist
Ernst & Young Global
Delivery Services,
Kolkata

DATE
19 SEP, FRIDAY

TIME
2:00 PM - 2:30 PM

VENUE
A01-007



DATA-DRIVEN INDUSTRIAL PROBLEMS: STATISTICAL APPROACH

ABSTRACT

This study highlights how statistical modelling enables data-driven solutions to industrial problems. Using techniques such as regression, time series forecasting, and probabilistic models, industries can optimize processes, predict failures, improve quality, and support informed decision-making. The study also emphasizes the role of mathematical statistics in developing rigorous models, deriving theoretical insights, and ensuring reliable inference for complex industrial systems.

Industry-Academia Conclave 7.0

Paths for Better Cyber Security: From Research and Practice



Speaker

**DR. M.
SETHUMADHAVAN**

Director, COE in
Cyber Security
Amrita University



Friday,
Sep 19, 2025



2:35 PM –
3:05 PM



AOO7



PATHS FOR BETTER CYBER SECURITY: FROM RESEARCH AND PRACTICE

ABSTRACT

Cyber security has become one of the most critical challenges of our digital age, impacting individuals, organizations, and nations alike. Addressing these challenges requires not only technological innovation but also a convergence of research insights and practical strategies. This lecture, “Paths for Better Cyber Security: From Research and Practice”, explores the multiple dimensions of strengthening cyber security—ranging from foundational research in cryptography, network defense, and artificial intelligence, to practical implementations in software security, secure coding practices, and vulnerability management.



An Application of Newsboy Problem in Supply Chain Optimisation of Online Fashion E- Commerce



Kamanchi Chandramouli
Staff Research Scientist
IBM Research, Bangalore



Friday,
Sep 19, 2025



3:20 PM -
3:50 PM



A007



AN APPLICATION OF NEWSBOY PROBLEM IN SUPPLY CHAIN OPTIMISATION OF ONLINE FASHION E- COMMERCE

ABSTRACT

We describe a machine learning based supply chain optimization model deployed in an online fashion e-commerce company in India called Myntra. Our model is simple, elegant and easy to put into service. The model utilizes historic data and predicts the quantity of Stock Keeping Units (SKUs) to hold so that the metrics "Fulfilment Index" and "Utilization Index" are optimized. We present the mathematics central to our model as well as compare the performance of our model with baseline regression based solutions.



INDUSTRY-ACADEMIA CONCLAVE 7.0

Multimodal Human Activity Recognition with Time-Series LLMs and Privacy-Preserving Federated Learning



Dr. Tanmay Sen

Assistant Professor
SQC & OR Unit
ISI Kolkata

DATE
20 SEP, FRIDAY

TIME
11:25AM - 11:55AM

VENUE
A01-002



MULTIMODAL HUMAN ACTIVITY RECOGNITION WITH TIME-SERIES LLMS AND PRIVACY-PRESERVING FEDERATED LEARNING

ABSTRACT

Human Activity Recognition (HAR) has emerged as a cornerstone for next-generation applications in healthcare monitoring, fitness tracking, and smart environments. However, real-world HAR faces three persistent challenges: reliance on single modalities, limited availability of labeled data, and privacy risks in centralized training. In this talk, I will present recent advances in multimodal HAR with time-series large language models (LLMs) and federated learning (FL). I will first discuss FedTime-MAGNET, a multimodal FL framework that integrates heterogeneous data sources such as depth cameras, pressure mats, and accelerometers using a Multimodal Adaptive Graph Neural Expert Transformer (MAGNET) fused with a lightweight T5 encoder. This architecture captures both cross-modal interactions and temporal dependencies, achieving state-of-the-art performance in distributed HAR tasks. Complementing this, I will present GraFeHTy, a semi-supervised graph convolutional federated model, which constructs similarity graphs from sensor signals to improve recognition under noisy or sparsely labeled settings. Finally, I will describe our latest extension that incorporates differentially private federated learning for multimodal HAR, ensuring strong privacy guarantees without compromising recognition accuracy.