

# Winter School on Decentralised Trust and Blockchains 2025

*Organized by the Centre for Cybersecurity, Trust and Reliability (CyStar), IIT Madras*

**Dates:** Dec 08 - 20, 2025

**Location:** Classroom #CS 15, Department of Computer Science and Engineering, IIT Madras

## Monday Dec 8th (Day 1)

09:30 AM - 11:00 AM	Introduction to Decentralized Trust Speaker: John Augustine (Professor, CSE, IIT Madras; Co-Director, CyStar)
11:00 AM - 11:30 AM	<i>Break</i>
11:30 AM - 13:00 PM	Introduction to Byzantine Agreement Speaker: John Augustine
13:00 PM - 14:00 PM	<i>Lunch</i>
14:00 PM - 15:30 PM	Distributed Systems (Hands-on) Speaker: Pappu Kumar (PhD Scholar, CSE, IIT Madras) and John Augustine
15:30 PM - 16:00 PM	<i>Break</i>
16:00 PM - 17:30 PM	Distributed Systems (Hands-on) Speaker: Pappu Kumar and John Augustine

## Tuesday, Dec 9th (Day 2)

09:30 AM - 11:00 AM	Cryptography 101 for DLTs Speaker: C Pandurangan (Satish Dhawan Chair Professor, EECS, IISc; Retd. Professor, CSE, IIT Madras)
11:00 AM - 11:30 AM	<i>Break</i>

11:30 AM - 13:00 PM	Cryptography 101 for DLTs Speaker: C Pandurangan
13:00 PM - 14:00 PM	<i>Lunch</i>
14:00 PM - 15:30 PM	Implementing Cryptography Primitives Speaker: TA's & C Pandurangan
15:30 PM - 16:00 PM	<i>Break</i>
16:00 PM - 17:30 PM	Implementing Cryptography Primitives Speaker: TA's & C Pandurangan

### *Wednesday, Dec 10th (Day 3)*

09:30 AM - 11:00 AM	Introduction to Zero Knowledge Speaker: C Pandurangan
11:00 AM - 11:30 AM	<i>Break</i>
11:30 AM - 13:00 PM	Consensus in Blockchains Speaker: John Augustine
13:00 PM - 14:00 PM	<i>Lunch</i>
14:00 PM - 15:30 PM	Introduction to Smart Contract Programming Speaker: Divya Rathore ( <i>PhD Scholar, CSE, IIT Madras</i> )
15:30 PM - 16:00 PM	<i>Break</i>
16:00 PM - 17:30 PM	Introduction to Smart Contract Programming Speaker: Divya Rathore

### *Thursday, Dec 11th (Day 4)*

09:30 AM - 11:00 AM	Cyberforensics and Cybersecurity Speaker: Garima Singh ( <i>Consultant, Blockchain, AI &amp; Cybersecurity</i> )
11:00 AM - 11:30 AM	<i>Break</i>
11:30 AM - 13:00 PM	TBC Speaker: Subodh Sharma ( <i>Associate Professor @ IIT Delhi   Pankaj Gupta Chair of Privacy and Decentralisation</i> )

13:00 PM - 14:00 PM	<i>Lunch</i>
14:00 PM - 15:30 PM	Blockchain, Tokenization, Payments, Identity and DeFi Speaker: Sandeep K. Shukla ( <i>Director, International Institute of Information Technology Hyderabad, (IIIT Hyderabad)</i> )
15:30 PM - 16:00 PM	<i>Break</i>
16:00 PM - 17:30 PM	FinTech Security: Attack & Defense Demo Speaker: Rashmi P. Sarode ( <i>Principal Project Scientist, CyStar, IIT Madras</i> )

### ***Friday, Dec 12th (Day 5)***

09:30 AM - 11:00 AM	DAG-based Consensus Mechanisms Speaker: John Augustine
11:00 AM - 11:30 AM	<i>Break</i>
11:30 AM - 13:00 PM	Select Topics in DLT research Speaker: John Augustine
13:00 PM - 14:00 PM	<i>Lunch</i>
14:00 PM - 15:30 PM	Smart Contract - Attack & Defense Speaker: Divya Rathore ( <i>PhD Scholar, CSE, IIT Madras</i> )
15:30 PM - 16:00 PM	<i>Break</i>
16:00 PM - 17:30 PM	Smart Contracts and DApps Speaker: Divya Rathore

### ***Saturday, Dec 13th (Day 6)***

09:30 AM - 11:00 AM	Exploring NFTs: Demo Speaker: Trishie Sharma ( <i>PostDoc Researcher, CyStar, IIT Madras</i> )
11:00 AM - 11:30 AM	<i>Break</i>
11:30 AM - 13:00 PM	Comparing Blockchains: Demo Speaker: Rashmi P. Sarode
13:00 PM - 14:00 PM	<i>Lunch</i>

14:00 PM - 15:30 PM	Social Outing
15:30 PM - 16:00 PM	
16:00 PM - 17:30 PM	

### Monday, Dec 15th (Day 7)

09:30 AM - 11:00 AM	DLTs in Start-ups & Enterprises - Overview and Case Studies Speaker: Deepak Lalan ( <i>Emerging Technology Strategist</i> )
11:00 AM - 11:30 AM	Break
11:30 AM - 13:00 PM	Introduction to dApp Architecture and Modeling Speaker: Deepak Lalan
13:00 PM - 14:00 PM	<i>Lunch</i>
14:00 PM - 15:30 PM	Industrial Case Study: Introduction to Hedera Speaker: Pathorn Tengkiaattrakul ( <i>Developer Advocate, Hashgraph</i> )
15:30 PM - 16:00 PM	<i>Break</i>
16:00 PM - 17:30 PM	Assignment: DApp Development

### Tuesday, Dec 16th (Day 8)

09:30 AM - 11:00 AM	India's Blockchain Policy Playbook: Between Innovation and Regulation Speaker: Ishita Sharma ( <i>Managing Partner, Fathom Legal, Advocates &amp; Corporate Consultants</i> )
11:00 AM - 11:30 AM	Break
11:30 AM - 13:00 PM	DAG-based Efficient Parallel Scheduler for Blockchains: Hyperledger Sawtooth as a Case Study Speaker: Sathya Peri ( <i>Professor at Department of CSE, IIT Hyderabad</i> )
13:00 PM - 14:00 PM	<i>Lunch</i>

14:00 PM - 15:30 PM	Industrial Case Study: Hedera Core Concepts Speaker: Pathorn Tengkiaattrakul
15:30 PM - 16:00 PM	<i>Break</i>
16:00 PM - 17:30 PM	Participants Presentation (Dapp Development)
<b><i>Wednesday, Dec 17th (Day 9)</i></b>	
09:30 AM - 11:00 AM	Interoperability in the Age of Web 3.0 Speaker: Sandip Chakraborty ( <i>Associate Professor at Indian Institute of Technology Kharagpur</i> )
11:00 AM - 11:30 AM	<i>Break</i>
11:30 AM - 13:00 PM	Proof-of-Stake: Securing Blockchains with Cryptoeconomics Speaker: Subhra Mazumdar ( <i>Assistant Professor at IIT Indore</i> )
13:00 PM - 14:00 PM	<i>Lunch</i>
14:00 PM - 15:30 PM	Industrial Case Study: Hedera Developer Fundamental Speaker: Pathorn Tengkiaattrakul
15:30 PM - 16:00 PM	<i>Break</i>
16:00 PM - 17:30 PM	Team Formation and Ideation for Hackathon
<b><i>Thursday, Dec 18th (Day 10)</i></b>	
09:30 AM - 11:00 AM	Indo Centric applications of DLT's Speaker: Kamlesh Nagware ( <i>Co-Founder &amp; Director, FSV Capital</i> )
11:00 AM - 11:30 AM	<i>Break</i>
11:30 AM - 13:00 PM	Fintech Applications of DLT's Speaker: Prasanna Lohar ( <i>Founder &amp; President, India Blockchain Forum</i> )
13:00 PM - 14:00 PM	<i>Lunch</i>
14:00 PM - 15:30 PM	Industrial Case Study: Hedera Open-source and Use-cases Speaker: Pathorn Tengkiaattrakul
15:30 PM - 16:00 PM	<i>Break</i>

16:00 PM - 17:30 PM	Pitch Hackathon Ideas
<b><i>Friday, Dec 19th (Day 11)</i></b>	
09:30 AM - 11:00 AM	Scaling Blockchains: Understanding Layer 2 Systems Speaker: Kalpesh Kapoor ( <i>Visiting Faculty at IISER Pune &amp; Professor at IIT Guwahati</i> )
11:00 AM - 11:30 AM	Break
11:30 AM - 13:00 PM	A Combinatorial Approach to Detecting Financial Crimes in Blockchain Networks Speaker: Ashwin Ganesan ( <i>Consultant, CyStar, IIT Madras</i> )
13:00 PM - 14:00 PM	<i>Lunch</i>
14:00 PM - 15:30 PM	Irmin: Immutable, Fast, Distributed Storage for Blockchains Speaker: KC Sivaramakrishnan ( <i>Asst. Professor, CSE, IIT Madras, and Co-Director, CyStar, IIT Madras</i> )
15:30 PM - 16:00 PM	<i>Break</i>
16:00 PM - 17:30 PM	Work on the hackathon
<b><i>Saturday, Dec 20th (Day 12)</i></b>	
09:30 AM - 13:00 PM	Work on the Hackathon
13:00 PM - 14:00 PM	<i>Lunch</i>
14:00 PM - 17:30 PM	Hackathon Submission and Evaluation
	Closing session.

