Students Interaction with team from University of Alabama, Huntsville, USA

07th February 2023

Organized by

School of CSE and International Relations and Research Collaborations and

Venue: Library Seminar Hall

International Prime Lecture Series (2023) By Dr. Felix Härer, Senior Researcher, Digitalization and Information Systems Group, University of Fribourg, Switzerland	
About the Student Interaction Program	School of CSE and International Relation and Research Collaboration, REVA University have organized an interactive session on "Open and Permissionless Blockchains - A Swiss Perspective" for students and faculty with guest lecturer Dr. Felix Härer, Senior Researcher, Digitalization and Information Systems Group, University of Fribourg, Switzerland. The interaction was aimed to discuss about recent trends and research area on Blockchains Technology. Attendees were given awareness on 1. Basic Architecture and implementation of Blockchains Technology. 2. Recent research trends of Blockchains Technology.
Organized by	School of CSE and International Relation and Research Collaboration, REVA University
Date	14.02.23
Co Ordinator	Dr. Mayuri Kundu
Targeted Audience	Students and faculty of School of CSE.
Resource Person(s)	Dr. Felix Härer, Senior Researcher, Digitalization and Information Systems Group, University of Fribourg, Switzerland
No. of Participants	100
Feedback from Participants	All attendees have shared that they got a strong introduction of recent technology like Blockchains. And the direction given by the resource person would be beneficial for them in their future projects and research related works.

Talk of Contents:

Blockchain is a distributed ledger (a list of transactions) that allows for information to be captured and shared in a network. In this network, each member maintains their own copy of the information and all members must validate and store each update collectively. By doing so, every member is always working with the same information which can provide online systems a single source of truth to work with. In a way blockchains are very similar to a Google sheet but slightly different as blockchains only allow data to be added and once added, it can never be removed.

Blockchain has three basic functionalities which can provide many different solutions for agri-food supply chains and smallholder farmers. Firstly, blockchain facilitates direct peer to peer transactions. Secondly, blockchain facilitates fully transparent and secure data storage. Lastly, blockchain allows for logic and agreements to be executed automatically.

Traditional database technologies present several challenges for recording financial transactions. For instance, consider the sale of a property. Once the money is exchanged, ownership of the property is transferred to the buyer. Individually, both the buyer and the seller can record the monetary transactions, but neither source can be trusted. The seller can easily claim they have not received the money even though they have, and the buyer can equally argue that they have paid the money even if they haven't.

To avoid potential legal issues, a trusted third party has to supervise and validate transactions. The presence of this central authority not only complicates the transaction but also creates a single point of vulnerability. If the central database was compromised, both parties could suffer.

Blockchain mitigates such issues by creating a decentralized, tamper-proof system to record transactions. In the property transaction scenario, blockchain creates one ledger each for the buyer and the seller. All transactions must be approved by both parties and are automatically updated in both of their ledgers in real time. Any corruption in historical transactions will corrupt the entire ledger. These properties of blockchain technology have led to its use in various sectors, including the creation of digital currency like Bitcoin.

When it comes to security operations on a blockchain ledger, which can only be done by a few people authorized to do so, we use a permission ledger. In simple terms, the distributed ledger in this can only be accessed by a few people who have been allowed to do so by the administrator.

A permissionless blockchain is completely the opposite of a Permissioned blockchain. In the Permissionless model, which is also known as a public blockchain, there are no restrictions, and the participation is not controlled by an administrator. Anyone can participate in the consensus and validate the data.

Open and permissionless blockchains are distributed systems with tens of thousands of nodes that, in contrast to systems of the past decades, allow for distribution and decentralized coordination without

trusted third parties and provide open access, enabling novel decentralized applications. This talk covers blockchain foundations, the largest open and permission less blockchains, and the latest developments regarding applications and research.

Learning Objectives:

The interaction will help attendees to:

1. Grow interest on recent technology like Blockchains.
2. Learn about application of Blockchains.
3. Understand the recent development on Blockchains.
4. Know about the implementation of blockchains in their existing project works.

Program Schedule:

S. No.	**Schedule**	**Content**
Resource Person: Dr. Felix Härer, Senior Researcher, Digitalization and Information Systems Group, University of Fribourg, Switzerland		
1.	9:30 AM-10.00 AM	Welcome speech and felicitation of resource Person
2.	10:00 AM -11:30 AM	Open and Permissionless Blockchains - A Swiss Perspective

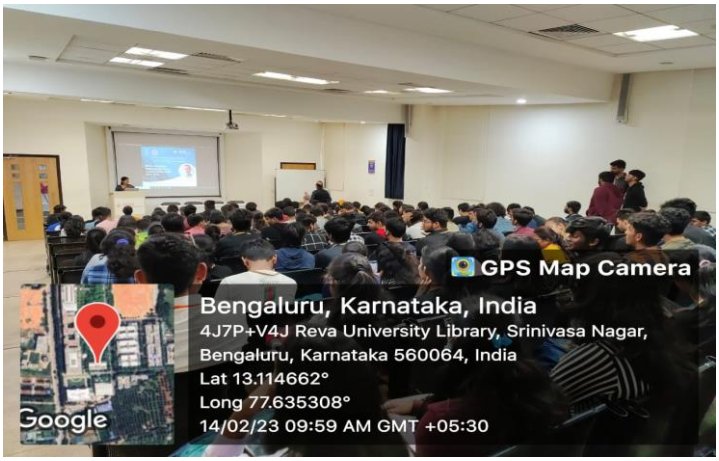
Some Snapshots if the Workshops:

Dr. Gururaj Murtugudde, Program Coordinator , CSE is welcoming the resource person on behalf of School of CSE.

Dr. Pasupuleti Visweswara Rao, Director of International Relation and Research Collaboration welcoming the resource person and participants

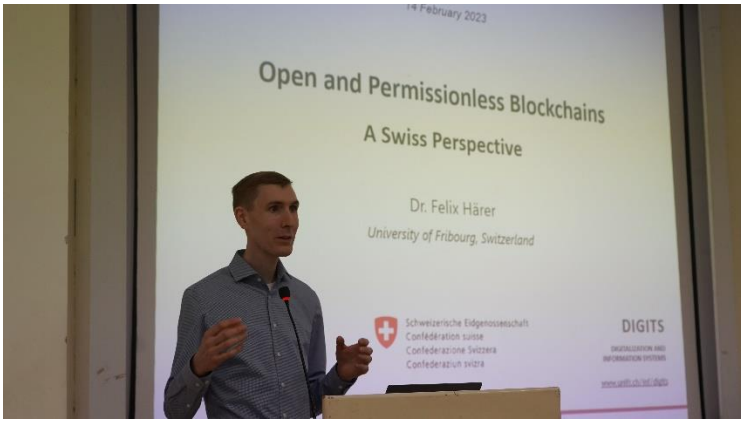
Dr. R C Biradar, Pro Vice Chancellor welcoming the resource person and participants

Felicitation to Dr. Felix Harer



Audience at the Library Seminar Hall

Students and faculty of School of Computer Science and Engineering attending the session



Dr. Felix Härer, Senior Researcher, Digitalization and Information Systems Group, University of Fribourg, Switzerland during his talk

Dr. Felix Härer with honourable VC Sir Dr. M Dhanamjaya , Registrar Sir N Ramesh and other members of organizing committee from REVA University