Blockchain and Cryptocurrencies Security School

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1 Introduction

I am supported by COINS to attend Blockchain and Cryptocurrencies Security School (BCS) which took place in University of Padua, Italy. BCS school is organized by the SPRITZ Security and Privacy Research Group of University of Padua. This school was mainly focused with the security and privacy aspects of cryptocurrencies and blockchain. This school brought many researchers to debate contemporary issues in this area. I am grateful to COINS to fund me for this opportunity. University of Padua is one of the oldest universities in the world. The universitys list of alumni and former faculty includes famed astronomers Copernicus and Galileo. It was the first university in the world which allowed women to study, earn degree and teach. This was one of the interesting facts, I got to know about. BSC school also organised social event to visit few famous places as "Palazzo Bo" and "Scrovegni Chapel" of Padua which was quite fascinating followed by a delicious Italian dinner.

2 Summer School

The summer school was well organised and brought many researchers from different countries. The details of the program can be found from the website `https://spritz.math.unipd.it/events/2019/PIU2019/PagesOutput/BCS/index.html`. In the program, there were few PhD forum sessions where all the participants had to present their previous and ongoing research work. I found PhD forum very knowledgeable and interesting. I also presented about my ongoing research work. One of the organizer of this school was my Master's supervisor and I got the chance to meet her as well as got possibility for a joint work in near future. Few of the speakers also told about internships and possible collaboration opportunities. Following are the few of the talks which I really enjoyed and found interesting:

- *Blockchain enabled Data Storage, Sharing and Trading* by Sushmita Ruj was interesting. She also talked about some interesting open problems such as Proof of Erasure and Proof about the address of the mining location etc. She presented further research direction in these areas to make more secure and efficient blockchain enabled sharing and trading.

- *Detection of browser-based crytocurrency mining* by Veelasha Moonsamy was a new topic for me. I had heard about this browser-based mining, but I didn't know that a lot of work

has been done and still going on this field. She catered her work on detection of this kind of mining, and her group conducted extensive experiments to collect the data about many mining services of these kinds. I would like to explore this field about how this kind of mining can be made more energy efficient (in terms of Users' resources) and secure.

- *TrustChain: Replacing Global Consensus with Trust* by Jan Rellermeyer. Trustchain builds trust among strangers and creates the trusted transaction, and a transaction between two parties remains on the chains of only these two parties. It gives a Sybil resistant scalable blockchain. However, in trustchain, a block consists of only one transaction. Trustchain also has checkpoints, and consensus takes place among these checkpoints to make a consistent view of the chain. Prof Jan Rellermeyer also told about how trustchain is going to be used to put Jewelry on Blockchain. He also told us an amazing fact about how Netherland is planning to put Passport data on a blockchain.

3   Conclusion

BCS school was a nice experience to connect with new researchers in blockchain and cryptography field. I got to know about few internship and research visit opportunities. I am grateful to COINS research school for providing me the opportunity to attend such an event.