

[Conference](#) »Program

## 2023 IEEE International Conference on Blockchain and Cryptocurrency (ICBC) Program



**Crosschain-WK:** The last paper presentation extends beyond (12:30) the session end time of 10:30.



**CryptoEx-WK:** The last paper presentation ends before (9:30) the session end time of 9:40.



**Crosschain-WK:** The last paper presentation ends before (2:03) the session end time of 2:30.

Dubai time	Monday, May 1	Tuesday, May 2	Wednesday, May 3	Thursday, May 4	Friday, May 5
8:30 - 9:40 am	Tutorial 1: <i>Machine Economy: From Theory to Practice</i>	ICBC 5: <i>Incentives</i>	ICBC 9: <i>SoK Paper Session</i>	ICBC 13: <i>BC Protocols 3</i>	CryptoEx-WK: <i>Short Paper Session</i>
9:40 - 9:45 am	Tutorial 2: <i>Cross chain</i>				CryptoEx-Welcome: <i>Welcome</i>
					Crosschain-WK: <i>Workshop Session</i>

9:45 - 10:15 am	<i>communication through authenticated queries on EVM based chains</i>	PS 1: <i>Poster Session 1</i>	PS 3: <i>Poster Session 3</i>	PS 5: <i>Poster Session 5</i>	<i>Address &amp; Keynote Speech</i>	
10:15 - 10:25 am				Keynote 3: <i>Blockchain as an enabler technology of Self-Sovereign Identities and Verifiable Credential</i>		
10:25 - 10:30 am		Keynote 1: <i>Blockchain Turbulences: From Trust to Censorship Resistance</i>	Keynote 2: <i>Repurposing but uncompromising the Blockchain</i>			
10:30 - 10:45 am					CryptoEx-WK: <i>Poster Session 1</i>	
10:45 - 11:00 am	Tutorial 3: <i>Executing a blockchain-based confidential application in minutes</i>					
11:00 - 11:15 am					CryptoEx-WK: <i>Technical Session 1</i>	Crosschain-WK: <i>Workshop Session</i>
11:15 am - 12:15 pm	Tutorial 4: <i>Self-Sovereignty and Decentralisation in Digital Identity Management: Opportunities and Challenges.</i>	ICBC 6: <i>Databases, Monitoring, Visualization</i>	ICBC 10: <i>BC and Crypto Applications 2</i>	ICBC 14: <i>Security and Privacy Applications</i>		
12:15 - 12:30 pm						
12:30 - 12:45 pm						
12:45 - 1:03 pm		DS 1: <i>Demo Session 1</i>	DS 2: <i>Demo Session 2</i>			
1:03 - 1:30 pm						
1:30 - 1:45 pm					Crosschain-WK: <i>Workshop Session 3</i>	
1:45 - 2:30 pm	ICBC 1: <i>Security, Privacy, and Identity</i>	ICBC 7: <i>BC and Crypto Applications 1</i>	ICBC 11: <i>BC Protocols 1</i>			CryptoE-WK: <i>Technical Session</i>
2:30 - 2:45 pm	ICBC 2: <i>Crypto, NFTs, Prediction Markets</i>			ICBC 15: <i>Scalability</i>		
2:45 - 3:10 pm		Panel 1: <i>Blockchain for Post-Quantum AI</i>	Panel 2: <i>CBDCs - Will they ever happen? When? In what form?</i>			
3:10 - 3:35 pm					CryptoEx-WK: <i>Poster</i>	

3:35 -		<i>and security:</i>			<i>Session 2</i>
3:40 pm		<i>How much</i>			
3:40 -		<i>help it may</i>			
3:45 pm		<i>bring?</i>			
3:45 -					
4:05 pm		PS 2: <i>Poster</i>	PS 4: <i>Poster</i>		CryptoEx-
4:05 -		<i>Session 2</i>	<i>Session 4</i>		WK:
4:15 pm					<i>Technical</i>
4:15 -	ICBC 3:			Panel 3: <i>Are</i>	<i>Session 3</i>
5:20 pm	<i>Analytics,</i>			<i>private</i>	
5:20 -	<i>Learning, and</i>	ICBC 8:	ICBC 12: <i>BC</i>	<i>blockchains</i>	
5:30 pm	<i>Applications</i>	<i>Security and</i>	<i>Protocols 2</i>	<i>dead?</i>	
5:30 -	ICBC 4:	<i>Privacy</i>			
5:55 pm	<i>Protocols,</i>				
5:55 -	<i>Policies,</i>				
6:15 pm	<i>Compliance,</i>				
	<i>Incentives</i>				



Monday, May 1

Monday, May 1 8:30 - 10:30 (Asia/Dubai)

**Tutorial 1: Machine Economy: From Theory to Practice** ↗

**Xinxin Fan, Head of Cryptography, IoTEx, United States.**

**Simone Romano, Developer Advocate, IoTEx, United States.**

**Lei Xu, Department of Computer Science, Kent State University.**

Ball Room 1

Monday, May 1 8:30 - 10:30 (Asia/Dubai)

**Tutorial 2: Cross chain communication through authenticated queries on EVM based chains** ↗

**Damiano Di Francesco Maesa, Department of Computer Science, University of Pisa, Italy.**

Ball Room 2

Monday, May 1 10:45 - 12:45 (Asia/Dubai)

**Tutorial 3: Executing a blockchain-based confidential application in minutes** ↗

**Ambre Toulemonde.**

**Aimen Djari.**

**Anthony Simonet-Boulogne.**

Ball Room 1

Monday, May 1 10:45 - 12:45 (Asia/Dubai)

**Tutorial 4: Self-Sovereignty and Decentralisation in Digital Identity Management: Opportunities and Challenges.** ↗

**Salil Kanhere, UNSW Sydney, Australia.**

**Helen Paik, UNSW Sydney, Australia.**

**Sushmita Ruj, UNSW Sydney, Australia.**

Ball Room 2

Monday, May 1 1:45 - 3:45 (Asia/Dubai)

## ICBC 1: Security, Privacy, and Identity ↗


Short Paper Session-1

TPD

Ball Room 1

**1:45 *Fast Computation of Multi-Scalar Multiplication for Pairing-Based zkSNARK Applications*** 

Guiwen Luo and Guang Gong (University of Waterloo, Canada)

**2:05 *Gated Tri-Tower Transformer (GT3) - An Inflated Power Generation Attack Detector for Microgrids*** 

Ting-Yu Syu (National Yang Ming Chiao Tung University, Taiwan); Ted T. Kuo (National Yang Ming Chiao Tung University, Taiwan & National Chiao Tung University, Taiwan); Chia-Yu Lin (National Central University, Taiwan)

**2:25 *Towards Improved Illicit Node Detection with Positive-Unlabelled Learning*** 

Junliang Luo (McGill University & Samsung AI Center Montreal, Canada); Farimah Poursafaei and Xue Liu (McGill University, Canada)

**2:45 *Exploring Randomness in Blockchains*** 

Gabriel Blaut (Freie Universität Berlin, Germany); Xuyang Ma (University of Electronic Science and Technology of China, China); Katinka Wolter (Free University of Berlin, Germany)

**3:05 *Service Applicable Blockchain-based Self-Sovereign Identity Management System*** 

Jeongheon Kim, MinJi Choi, Jongsoo Woo and James Won-Ki Hong (POSTECH, Korea (South))

**3:25 *Empirical Evaluation of Self-Sovereign Identity Technology*** 

Alexandre Siqueira (Universidade Federal de São Paulo & Mercado Livre, Brazil); Arlindo F da Conceicao (Federal University of São Paulo, Brazil); Vladimir Rocha (Universidade Federal do ABC, Brazil)

Monday, May 1 1:45 - 3:45 (Asia/Dubai)

## ICBC 2: Crypto, NFTs, Prediction Markets ↗

Short Paper Session-2

TPD

Ball Room 2

**1:45 *Predicting NFT Classification with GNN: A Recommender System for Web3***

**Assets** 

Guangsheng Yu (CSIRO, Australia); [Qin Wang](#) (CSIRO Data61, Australia); Tanzeela Altaf (University of Technology, Sydney, Australia); Xu Wang (University of Technology Sydney, Australia); Xiwei Xu (Data61-CSIRO & UNSW, Australia); Shiping Chen (Commonwealth Scientific and Industrial Research Organisation, Australia)

**2:05 *Predicting Cryptocurrencies Market Phases through On-Chain Data Long-Term Forecasting*** 

[Bruno Casella](#) and Lorenzo Paletto (University of Turin, Italy)

**2:25 *Optimal Hedge Ratio Estimation for Bitcoin Futures using Kalman Filter*** 

[Toshiko Matsui](#) (Imperial College London, United Kingdom (Great Britain)); William Knottenbelt (Imperial College, United Kingdom (Great Britain))

**2:45 *Cross-referencing scheme to ensure NFT and platform linkage unaffected by forking*** 

Keigo Kimura, Mitsuyoshi Imamura and [Kazumasa Omote](#) (University of Tsukuba, Japan)

**3:05 *Alleviating Crypto Gas War in NFT Launching*** 

[Kyungchan Ko](#), Taeyeol Jeong, Jongsoo Woo and James Won-Ki Hong (POSTECH, Korea (South))

**3:25 *Graph-Centric Crypto Price Prediction*** 

[Charalampos Kleitsikas](#), Katerina Doka, Agis Politis and Nectarios Koziris (National Technical University of Athens, Greece)

Monday, May 1 4:15 - 6:15 (Asia/Dubai)

ICBC 3: Analytics, Learning, and Applications 

Short Paper Session-3

TPD

Ball Room 1

#### **4:15 *Data Analytics on Blockchains***

Issam Al-Azzoni and Saqib Iqbal (Al Ain University, United Arab Emirates); Nenad Petrovic (University of Nis, Faculty of Electronic Engineering, Serbia)

#### **4:32 *A Blockchain Framework in Compliance with Data Protection Law to Manage and Integrate Human Knowledge by Fuzzy Cognitive Maps: Small Business Loans***

Swati Sachan (University of Liverpool, United Kingdom (Great Britain)); Dale S. Fickett (University of Richmond, USA); Nan Ei Ei Kyaw, Rituparna Shome Purkayastha and Renimol S (University of Liverpool, United Kingdom (Great Britain))

#### **4:49 *Real Estate Tokenization in Germany: Market Analysis and Concept of a Regulatory and Technical Solution***

Robert Henker (XU Exponential University, Germany); Daniel Atzberger (Hasso Plattner Institute, Digital Engineering Faculty, University of Potsdam, Germany); Willy Scheibel and Jürgen Döllner (Hasso Plattner Institute - Digital Engineering Faculty - University of Potsdam, Germany)

#### **5:06 *Account Clustering in the Polkadot Network: Heuristic, Experiments, and Insights***

Maurantonio Caprolu and Roberto Di Pietro (Hamad Bin Khalifa University, Qatar)

#### **5:23 *FLOATING: Federated Learning for Optimized Automated Trajectory Information Storing on Blockchain***

Junaid Ahmed Khan (Western Washington University, USA); Weiyi Wang and Kaan Ozbay (NYU, USA)

#### **5:40 *Bow-tie structure of the Polkadot transfer network***

Matija Piškorec (Rudjer Boskovic Institute & University of Zurich, Croatia); Ben Domenic James Murphy and Florian Ruegsegger (University of Zurich, Switzerland); Sina Rafati Niya (Andreasstrasse, 15, Switzerland & University of Zurich, Switzerland); Claudio J. Tessone (University of Zurich, Switzerland)

#### **5:57 *HealthChain: A Blockchain-aided Federated Healthcare Management System***

Arnab Mukherjee (Indian Institute of Technology Patna, India); Raju Halder (IIT Patna, India); Joydeep Chandra (Indian Institute of Technology Patna, India); Shailesh Shrivastava (Dravidian University & National Informatics Centre, India)

Monday, May 1 4:15 - 6:15 (Asia/Dubai)

ICBC 4: Protocols, Policies, Compliance, Incentives 

Short Paper Session-4

TPD

Ball Room 2

**4:15 *TangleSim: An Agent-based, Modular Simulator for DAG-based Distributed Ledger Technologies*** 

Bing-Yang Lin, Daria Dziubałtowska, Piotr Macek and Andreas Penzkofer (IOTA Foundation, Germany); [Sebastian Müller](#) (Aix Marseille University, France)

**4:35 *A Game-Theoretic Analysis of the Consistency Requirement for Permissioned Blockchains*** 

[Ji Qi](#) and Jinchuan Chen (Renmin University of China, China); Min Zhang (Hong Kong)

**4:55 *Determining Optimal Incentive Policy for Decentralized Distributed Systems Using Reinforcement Learning*** 

Elitsa Pankovska (University of Amsterdam, Bulgaria); [Ashish Rajendra Sai](#) (Open Universiteit, The Netherlands & Maastricht University, The Netherlands); Harald Vranken (Open University of The Netherlands, The Netherlands)

**5:15 *An Automated Policy Verification and Enforcement Framework for Ethereum Applications*** 

[Swagatika Sahoo](#) (Indian Institute of Technology, Patna (IIT Patna), India); Raju Halder and Samrat Mondal (IIT Patna, India)

**5:35 *A Comprehensive and Quantitative Evaluation Method for Blockchain Protocols*** 

[Chaehyeon Lee](#), Changhoon Kang, Heeju Ko, Jongsoo Woo and James Won-Ki Hong (POSTECH, Korea (South))

**5:55 *A First Analytics Approach to Cardano*** 

[Sina Rafati Niya](#) (Andreasstrasse, 15, Switzerland & University of Zurich, Switzerland); Ivana Mesić, Georgios Anagnostou, Gabriele Brunini and Claudio J. Tessone (University of Zurich, Switzerland)

Tuesday, May 2

Tuesday, May 2 8:30 - 9:45 (Asia/Dubai)



## ICBC 5: Incentives

Full Paper Session-1

**TPD**

Room: Ball Room

### **8:30 *Autopsy of Ethereum's Post-Merge Reward System***

Mikel Cortes-Goicoechea and Tarun Mohandas-Daryanani (Barcelona Supercomputing Center, Spain); Jose Luis Muñoz (UPC, Spain); Leonardo Bautista-Gomez (Status. im, Spain)

### **8:55 *Reputation as Contextual Knowledge: Incentives and External Value in Truthful Blockchain Oracles***

Michael W Bartholic (Georgetown University, USA); Eric W. Burger (Georgetown University & Former CTO, Federal Communications Commission, USA); Shinichiro Matsuo (Georgetown University, USA); Taeho Jung (University of Notre Dame, USA)

### **9:20 *Cobalt: Optimizing Mining Rewards in Proof-of-Work Network Games***

Arti Vedula, Abhishek Gupta and Shaileshh Bojja Venkatakishnan (The Ohio State University, USA)

Tuesday, May 2 9:45 - 10:15 (Asia/Dubai)

## PS 1: Poster Session 1

**None**

Room: Break Area

### **9:45 *Detecting and Preventing Credential Misuse in OTP-Based Two and Half Factor Authentication Toward Centralized Services Utilizing Blockchain-Based Identity Management***

Jozef Drga and Ivan Homoliak (Brno University of Technology, Czech Republic); Juraj Vančo (University of Tomáš Baťa, Czech Republic); Martin Perešini and Petr Hanacek (Brno University of Technology, Czech Republic); Athanasios V. Vasilakos (Fuzhou University & University of Agder, China)

### **9:50 *Anonymous Domain Ownership***

Jan Philipp Lauinger, Jens Ernstberger and Sebastian Steinhorst (Technical University of Munich, Germany)

**9:55 *A First Look into Blockchain DAOs*** 


Qin Wang (CSIRO Data61, Australia); Guangsheng Yu (CSIRO, Australia); Yilin Sai (CSIRO DATA61, Australia); Caijun Sun (Zhejiang Lab, China); Lam Duc Nguyen (CSIRO Data61, Australia); Xiwei Xu (Data61-CSIRO & UNSW, Australia); Shiping Chen (Commonwealth Scientific and Industrial Research Organisation, Australia)

**10:00 *Mass Exit Attacks on the Lightning Network*** 

Cosimo Sguanci and Anastasios Sidiropoulos (University of Illinois at Chicago, USA)

**10:05 *Blockchain-enabled Decentralized Anonymous Crowdsourcing based on Anonymous Payments*** 

Hanwei Zhu (ANU, Australia); Nan Wang and Sid Chi-Kin Chau (Australian National University, Australia); Majid Khonji (Masdar Institute, Khalifa University, United Arab Emirates)

**10:10 *Decentralized Machine Learning Governance: Overview, Opportunities, and Research Challenges*** 

Dana R Alsagheer (University of Houston & 4800 Calhoun Rd, Houston, USA); Nour Diallo (University of Houston, USA); Lei Xu (Kent State University, USA); Rabimba Karanjai and Weidong (Larry) Shi (University of Houston, USA)

## Tuesday, May 2 10:25 - 11:15 (Asia/Dubai)

### Keynote 1: Blockchain Turbulences: From Trust to Censorship Resistance

**Davor Svetinovic, Khalifa University, UAE**

Room: Ball Room

## Tuesday, May 2 11:15 - 12:30 (Asia/Dubai)

### ICBC 6: Databases, Monitoring, Visualization

Full Paper Session-2

**TPD**

Room: Ball Room

**11:15 *DELTA: DLT-Database Synchronization*** 

F. Javier Fernández-Bravo Peñuela (Instituto Tecnológico de Informática, Spain); Jordi Arjona Aroca (Instituto Tecnológico de Informático, Spain); Francesc D. Muñoz-Escoí

(Inst. Tecnológico de Informática, Spain); Yuriy Yatsyk Gavrylyak and Ismael Illán García (Instituto Tecnológico de Informática, Spain); José M. Bernabéu-Aubán (Universitat Politècnica de València, Spain)

**11:40 *Orion: A Centralized Blockchain Database with Multi-Party Data Access Control*** 

Artem Barger (Idea Blockchain Research Lab, Israel); Liran Funaro (IBM Research, Israel); Gennady Laventman (Independent Contributor, Israel); Hagar Meir and Dany Moshkovich (IBM Research, Israel); [Senthilnathan Natarajan](#) (IBM Research, India); [Yoav Tock](#) (IBM Research, Israel)

**12:05 *Smart Contract Data Monitoring and Visualization*** 

Seng Kuang Yap (Aglive Research, Australia); Zhongli Dong (The University of Sydney, Australia); Mark Toohey (Aglive Lab, Australia); [Young Choon Lee](#) (Macquarie University, Australia); Albert Zomaya (The University of Sydney, Australia)

**Tuesday, May 2 12:30 - 1:30 (Asia/Dubai)**

**DS 1: Demo Session 1** 

**None**

Room: Break Area

**12:30 *Contract Wallet Using Emails*** 

[Sora Suegami](#) and Kyohei Shibano (The University of Tokyo, Japan)

**12:42 *CarbonEdge: Demonstrating Blockchain-based Monitoring, Reporting and Verification of Greenhouse Gas Emissions on the Edge*** 

[Karl Seidenfad](#) and Jan Biermann (University of the Bundeswehr Munich, Germany); Ulrike Lechner (Universität der Bundeswehr München, Germany)

**12:54 *CALOSYS - A Robust Blockchain-based Marketing Loan Ecosystem for Small Businesses*** 

Kiarash Shamsi, Koosha Esmaeilzadeh Khorasani, Sara Rouhani and [Cuneyt Akcora](#) (University of Manitoba, Canada)

**1:06 *Connecting Smart Devices to Smart Contracts with W3bstream*** 

Xinxin Fan, Zhi Zhong, Dong Guo, Qi Chai and [Simone Romano](#) (IoTeX, USA)

**1:18 *Blockchain Network Studies Enabled by SimBlock*** 

Kazuyuki Shudo and Tsuyoshi Hasegawa (Kyoto University, Japan); Akira Sakurai (Tokyo Institute of Technology, Japan); Ryohei Banno (Kogakuin University, Japan)

**Tuesday, May 2 1:30 - 2:45 (Asia/Dubai)**

**ICBC 7: BC and Crypto Applications 1** ↗

Full Paper Session-3

**TPD**

Room: Ball Room

**1:30 vPass: Publicly Verifiable Fair Exchange Protocol for Vehicle Passports** 

Ismail Afia (University of Victoria, Canada); Hisham Galal (Concordia University, Canada); Riham AlTawy (University of Victoria, Canada); Amr Youssef (Concordia University, Canada)

**1:55 Tornado Vote: Anonymous Blockchain-based Voting** 

Robert Muth and Florian Tschorsch (Technische Universität Berlin, Germany)

**2:20 Decentralizing Custodial Wallets with MFKDF** 

Vivek C Nair and Dawn Song (UC Berkeley, USA)

**Tuesday, May 2 2:45 - 3:45 (Asia/Dubai)**

**Panel 1: Blockchain for Post-Quantum AI and security: How much help it may bring?** ↗

**Moderator: Adel/Bassem**

**Panelists:**

**Vinayaka Pandit (STSM and Senior Manager - Blockchain Research, IBM India)**

**Davor Svetinovic (Associate Professor, Khalifa University, UAE)**

**Siddarth Banerjee, Kandola Network, India**

Room: Ball Room

**Tuesday, May 2 3:45 - 4:15 (Asia/Dubai)**

**PS 2: Poster Session 2** ↗

**None**

Room: Break Area

**3:45 *BDSP: A Fair Blockchain-enabled Framework for Privacy-Enhanced Enterprise Data Sharing*** 

Lam Duc Nguyen (CSIRO Data61, Australia); James Hoang (CSIRO, Australia); Qin Wang (CSIRO Data61, Australia); Qinghua Lu (CSIRO, Australia); Xiwei Xu (Data61-CSIRO & UNSW, Australia); Shiping Chen (Commonwealth Scientific and Industrial Research Organisation, Australia)

**3:51 *Improved Schemes for Managing Reputation Scores in a Blockchain-based Decentralized Marketplace*** 

Ravi Mukkamala, Stephan Olariu and Meshari Aljohani (Old Dominion University, USA)

**3:57 *Proof of Directed Guiding Gradients: A New Proof of Learning Consensus Mechanism with Constant-time Verification*** 

Yongqi Wu, Sungmin Choi, Guining Liu and Xingjun Wang (Tsinghua University, China)

**4:03 *Trustless and Bias-resistant Game-theoretic Distributed Randomness*** 

Zhuo Cai and Amir Kafshdar Goharshady (Hong Kong University of Science and Technology, Hong Kong)

**4:09 *zk-Oracle: Trusted Off-Chain Compute and Storage for Decentralized Applications*** 

Binbin Gu and Faisal Nawab (University of California, Irvine, USA)

Tuesday, May 2 4:15 - 5:55 (Asia/Dubai)

**ICBC 8: Security and Privacy** 

Full Paper Session-4

TPD

Room: Ball Room

**4:15 *Mitigation of liveness attacks in DAG-based ledgers*** 

Darcy Camargo (IOTA Foundation, Brazil); Andreas Penzkofer (IOTA Foundation, Germany); Sebastian Müller (Aix Marseille University, France); William Sanders (IOTA Foundation, Norway)

**4:48 *A Blockchain-Based Framework for Scalable and Trustless Delegation of Cyber Threat Intelligence*** 

Kealan Dunnett (Queensland University of Technology, Australia); Shantanu Pal (Deakin University, Australia); Zahra Jadidi (Griffith University, Australia); Raja Jurdak (Queensland University of Technology & CSIRO, Australia)

**5:21 *LLD: A Low Latency Detection Solution to Thwart Cryptocurrency Pump & Dumps*** 

Ahmad Sani Bello (Hamad Bin Khalifa University, Qatar); Jens Schneider (HBKU, Qatar); Roberto Di Pietro (Hamad Bin Khalifa University, Qatar)

Wednesday, May 3

Wednesday, May 3 8:30 - 9:45 (Asia/Dubai)

ICBC 9: SoK Paper Session 

TPD

Room: Ball Room

**8:30 *SoK: Not Quite Water Under the Bridge: Review of Cross-Chain Bridge Hacks*** 

Sung-Shine Lee, Alex Murashkin, Martin Derka and Jan Gorzny (Quantstamp, Inc.)

**8:45 *SoK: Scalability Techniques for BFT Consensus*** 

Christian Berger (Innstraße 43 & University of Passau, Germany); Signe Schwarz-Rüsch and Arne Vogel (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany); Kai Bleeke (Technische Universität Braunschweig, Germany); Leander Jehl (University of Stavanger, Norway); Hans P. Reiser (Reykjavík University, Iceland); Rüdiger Kapitza (TU Braunschweig, Germany)

**9:00 *ML on Chain: The Case and Taxonomy of Machine Learning on Blockchain*** 

Binbin Gu (University of California, Irvine, USA); Abhishek Singh and Yinan Zhou (University of California - Irvine, USA); Juncheng Fang and Faisal Nawab (University of California, Irvine, USA)

**9:15 *SoK: Anonymity of Lightweight Clients in Cryptocurrency Systems*** 

Yiyin Zhang (University of Chinese Academy of Sciences & City University of Hong Kong, China)

**9:30 *SoK: The Next Phase of Identifying Illicit Activity in Bitcoin*** 

Jack Nicholls, Aditya Kuppa and Nhien-An Le-Khac (University College Dublin, Ireland)

Wednesday, May 3 9:45 - 10:15 (Asia/Dubai)

PS 3: Poster Session 3 ↗

None

Room: Break Area

**9:45 *Managing Write Access without Token Fees in Leaderless DAG-based Ledgers*** 

Darcy Camargo (IOTA Foundation, Brazil); Luigi Vigneri (IOTA Foundation, Malta); Andrew Cullen (Imperial College London, United Kingdom (Great Britain))

**9:51 *PoW-less Bitcoin with Confidential Byzantine PoA*** 

Marco Benedetti, Francesco De Sclavis, Marco Favorito, Giuseppe Galano, Sara Giammusso, Antonio Muci and Matteo Nardelli (Bank of Italy, Italy)

**9:57 *Blockchain-based SLA monitoring for 6G: Inter-Provider Agreements as a Use Case*** 

Farhana Javed, Josep Mangués-Bafalluy and Engin Zeydan (Centre Tecnològic de Telecomunicacions de Catalunya (CTTC), Spain)

**10:03 *SecurShard: A Model for Hierarchical Fault Detection in Blockchain Sharding*** 

Tirathraj Ramburn and Dhruvajyoti Goswami (Concordia University, Canada)

**10:09 *Reducing the Gas Usage of Ethereum Smart Contracts without a Sidechain*** 

Soroush Farokhnia and Amir Kafshdar Goharshady. (Hong Kong University of Science and Technology, Hong Kong)

Wednesday, May 3 10:15 - 11:15 (Asia/Dubai)

Keynote 2: Repurposing but uncompromising the Blockchain ↗

Stefan Tai, Technical University of Berlin

Room: Ball Room

Wednesday, May 3 11:15 - 12:30 (Asia/Dubai)

ICBC 10: BC and Crypto Applications 2 ↗

Full Paper Session-5

**TPD**

Room: Ball Room

**11:15 *DeFi Risk Transfer: Towards A Fully Decentralized Insurance Protocol*** 

Matthias Nadler, Felix Bekemeier and Fabian Schär (University of Basel, Switzerland)

**11:40 *Allowing Blockchain Loans with Low Collateral*** 

Tom Azoulay (Technion, Israel); Uri Carl (Blue Frontiers Partners LLC, USA); Ori Rottenstreich (Technion, Israel)

**12:05 *Towards a Secure and Scalable Access Control System Using Blockchain*** 

Zakaria Abou El Houda (University of Montreal, Canada); Jeremy Beauguard and Quentin Sauvetre (ISEN, France); Lyes Khoukhi (ENSICAEN, Normandie University, France)

Wednesday, May 3 12:30 - 1:30 (Asia/Dubai)

**DS 2: Demo Session 2** 

None

Room: Break Area

**12:30 *Demonstrating Low Cost SIM Bluetooth Token for Generation Of Ethereum Transactions*** 

Pascal Urien (Télécom Paris, France)

**12:42 *NFT SMASH: Game to Test Your NFT Rarity Sense*** 

Mikhail Krasnoselskii (Independent Resercher, Russia); Yash Madhwal (Skolkovo Institute of Science and Technology, Russia); Alexander Stepin (HSE University, Russia); Yury Yanovich (Skolkovo Institute of Science and Technology, Russia)

**12:54 *B4B.World: Decentralized Influencer Marketing Platform*** 

Anna Chukhnina, Grigorii Melnikov, Anton Pecherkin and Aleksandr Sokolov (B4B World, Montenegro); Yury Yanovich (Skolkovo Institute of Science and Technology, Russia)

**1:06 *A Blockchain-based Data Sharing Marketplace with a Federated Learning Use Case*** 



Zihan Zhou (Univesrity of Glasgow, United Kingdom (Great Britain)); Chenxiao Guo, Xiaoshuai Zhang, Ruiyu Wang, Lei Zhang and Muhammad Ali Imran (University of Glasgow, United Kingdom (Great Britain))

**1:18 DeMonitor: Monitoring Decentralization in Blockchains using BigQuery**

Jingyu Liu, Lu Liu, Zijing Li and Chao Li (Beijing Jiaotong University, China)

## Wednesday, May 3 1:30 - 2:45 (Asia/Dubai)

### ICBC 11: BC Protocols 1

Full Paper Session-6

**TPD**

Room: Ball Room

**1:30 Djed: A Formally Verified Crypto-Backed Autonomous Stablecoin Protocol** 

Joachim Zahnentferner (Djed Alliance, Brazil); Dmytro Kaidalov (Input Output, Germany); Jean-Frédéric Etienne (Input Output, France); Javier Díaz (Input Output, Argentina)

**1:55 SightSteeple: Agreeing to Disagree with Functional Blockchain Consensus** 

Aditya Ahuja (Indian Institute of Technology Delhi (India))

**2:20 Proof of Real-time Transfer: A Consensus Protocol for Decentralized Data Exchange** 

Narayanan Ramanathan, Ragul Kumar, Siddarth Banerjee and Sriram Padmanabhan (Kandola Network, USA)

## Wednesday, May 3 2:45 - 3:45 (Asia/Dubai)

### Panel 2: CBDCs - Will they ever happen? When? In what form?

**Moderator: Mohamed Al-Hemairy (Head, Technology Transfer Office, University of Sharjah)**

**Panelists:**

**Moayad Aloqaily (MBZUAI University, Abu Dhabi, UAE)**

**Dr. Hoda A. Alkhzaimi, Assistant Professor (Director, Center of Cyber Security NYUAD),  
President of Emirates Digital Association for Women**

**Alia Al-Saadawi, Researcher at American University Sharjah, UAE**

**Anish R Kurup, Accubits**

Room: Ball Room

**Wednesday, May 3 3:45 - 4:15 (Asia/Dubai)**

**PS 4: Poster Session 4** ↗

None

Room: Break Area

**3:45 *A journey towards the most efficient state database for Hyperledger Fabric*** 

Ivan Laishevskiy (Idea Blockchain Research Lab, Russia); Artem Barger (Idea Blockchain Research Lab, Israel); Vladimir Gorgadze (Moscow Institute of Physics and Technology)

**3:51 *Efficient Credential Revocation Using Cryptographic Accumulators*** 

Daria Schumm (University of New South Wales, Australia); Rahma Mukta (UNSW Sydney, Australia); Hye-young Paik (University of New South Wales, Australia)

**3:57 *On the Application of Blockchain technology for securing Flying Ad-Hoc Networks (FANET): A Survey*** 

Nesrine Zaghdoud (SUP'COM, Tunisia & CUD, United Arab Emirates); Maroua Abdelhafidh (ENIS, Tunisia & Canadian University Dubai, United Arab Emirates); Nadia Charef (Lorraine University, France & Erasmus Mundus GENIAL Program, France); Adel Ben Mnaouer (Canadian University Dubai & Faculty of Engineering, Applied Science and Technology, United Arab Emirates); Hatem Boujemaa (SupCom, Tunisia); Farid Touati (Qatar University, Qatar)

**4:03 *Bitcoin Double-Spending Attack Detection using Graph Neural Network*** 

Changhoon Kang, Jongsoo Woo and James Won-Ki Hong (POSTECH, Korea (South))

**4:09 *A Closer Look at Cross-Domain Maximal Extractable Value for Blockchain Decentralisation*** 

Johan Hagelskjær Sjørnsen, Weizhi Meng and Wei-Yang Chiu (Technical University of Denmark, Denmark)

**Wednesday, May 3 4:15 - 5:55 (Asia/Dubai)**

**ICBC 12: BC Protocols 2** ↗

Full Paper Session-7

**TPD**

Room: Ball Room

**4:15 *Farsighted Miners under Transaction Fee Mechanism EIP1559*** 

Jens Leth Hougaard (Copenhagen University, Denmark); Mohsen Pourpouneh (University of Oxford, United Kingdom (Great Britain))

**4:40 *Unstick Yourself: Recoverable Byzantine Fault Tolerant Services*** 

Tuan Tran (University of California, Santa Cruz, USA); Faisal Nawab (University of California, Irvine, USA); Peter Alvaro and Owen Arden (University of California Santa Cruz, USA)

**5:05 *A Ripple for Change: Analysis of Frontrunning in the XRP Ledger*** 

Vytautas Tumas (University of Luxembourg, Luxembourg); Beltran Fiz Pontiveros (University of Luxembourg & Telindus Luxembourg, Luxembourg); Christof Ferreira Torres (ETH Zurich, Switzerland); Radu State (University of Luxembourg, Luxembourg)

**5:30 *PPoS: Practical Proof of Storage for Blockchain Full Nodes*** 

Jun Wook Heo (Queensland University of Technology (QUT), Australia); Gowri Ramachandran (Queensland University of Technology, Australia); Raja Jurdak (Queensland University of Technology & CSIRO, Australia)

Thursday, May 4

Thursday, May 4 8:30 - 9:45 (Asia/Dubai)

**ICBC 13: BC Protocols 3** 

Full Paper Session-8

**TPD**

Room: Ball Room

**8:30 *DeWS: Decentralized and Byzantine Fault-tolerant Web Services*** 

Gowri Ramachandran and Thi Thuy Linh Tran (Queensland University of Technology, Australia); Raja Jurdak (Queensland University of Technology & CSIRO, Australia)

**8:55 *MEVade: An MEV-Resistant Blockchain Design*** 

Julien Piet, Vivek C Nair and Sanjay Subramanian (UC Berkeley, USA)

**9:20 *Agent-Based Modelling of Ethereum Consensus*** 

Benjamin Kraner and [Nicolò Vallarano](#) (University of Zurich, Switzerland); Capsar Schwarz-Schilling (Ethereum Foundation, Switzerland); Claudio J. Tessone (University of Zurich, Switzerland)

**Thursday, May 4 9:45 - 10:15 (Asia/Dubai)**

**PS 5: Poster Session 5** 

**None**

Room: Break Area

**9:45 *Efficient Liquidity Providing via Margin Liquidity*** 


Yeonwoo Jeong (Seoul National University, Korea (South)); [Chanyoung Jeoung](#) (CHA Medicine University, Korea (South)); Hosan Jeong (Seoul National Univ, Korea (South)); Sangyoon Han (Ministry of Justice, ROK, Korea (South)); Juntae Kim (Formula Labs, Korea (South))

**9:51 *The Internet of Energy Systems: Blockchain and Smart Contracts meet Federated Learning*** 

[Abdulrezzak Zekiye](#) (Koç University, Turkey); Oznur Ozkasap (Koc University, Turkey)

**9:57 *DHTee: Decentralized Infrastructure for Heterogeneous TEEs*** 

[Rabimba Karanjai](#) (University of Houston, USA); Zhimin Gao (Auburn University at Montgomery, USA); Lin Chen (University of Houston, USA); Xinxin Fan (IoTeX, USA); Taeweon Suh (Korea University, Korea (South)); Weidong (Larry) Shi (University of Houston, USA); [Lei Xu](#) (Kent State University, USA)

**10:03 *DeFaaS: Decentralized Function-as-a-Service for Emerging dApps and Web3*** 

[Rabimba Karanjai](#) (University of Houston, USA); Lei Xu (Kent State University, USA); Nour Diallo, Lin Chen and Weidong (Larry) Shi (University of Houston, USA)

**10:09 *Cryptocurrency meets CAP Theorem*** 

Lewis Tseng (Boston College, USA); [Moayad Alogailly](#) (Mohamed Bin Zayed University of Artificial Intelligence, Canada)

**Thursday, May 4 10:15 - 11:15 (Asia/Dubai)**

**Keynote 3: Blockchain as an enabler technology of Self-Sovereign Identities and Verifiable Credential** 

Adnan Imeri, Luxembourg Institute of Science and Technology (LIST)

Room: Ball Room

Thursday, May 4 11:15 - 12:30 (Asia/Dubai)

## ICBC 14: Security and Privacy - Applications

Full Paper Session-9

TPD

Room: Ball Room

### 11:15 *A Smart Contract-based Decentralized Marketplace System to Preserve Reviewer Anonymity*

Meshari Aljohani, [Ravi Mukkamala](#) and Stephan Olariu (Old Dominion University, USA)

### 11:40 *Privacy-preserving Trust Management for Blockchain-based Resource Sharing in 6G-IoT*

Guntur Dharma Putra (Universitas Gadjah Mada, Indonesia); Volkan Dedeoglu (CSIRO, Australia); [Salil S Kanhere](#) (UNSW Sydney, Australia); Raja Jurdak (Queensland University of Technology & CSIRO, Australia)

### 12:05 *BAILIF: A Blockchain Agnostic Interoperability Framework*

[Samuel Karumba](#) (UNSW Sydney, Australia); Raja Jurdak (Queensland University of Technology & CSIRO, Australia); [Salil S Kanhere](#) (UNSW Sydney, Australia); Subbu Sethuvenkatraman (CSIRO, Australia)

Thursday, May 4 1:30 - 3:35 (Asia/Dubai)

## ICBC 15: Scalability

Full Paper Session-10

TPD

Room: Ball Room

### 1:30 *W3Chain: A Layer2 Blockchain Defeating the Scalability Trilemma*

Miaoyong Xu, [Qing Wang](#) and Haohan Sun (Sun Yat-Sen University, China); Jianru Lin (CuriosityChain, China); Huawei Huang (Sun Yat-Sen University, China)

### 1:55 *SREP: Out-Of-Band Sync of Transaction Pools for Large-Scale Blockchains*

Novak Boskov, Seval Simsek, Ari Trachtenberg and David Starobinski (Boston University, USA)

**2:20 *Möbius: an Atomic State Sharding Design for Account-Based Blockchains*** 

Srisht Fateh Singh, Panagiotis Michalopoulos, Sidi Mohamed Beillahi, Andreas Veneris and Fan Long (University of Toronto, Canada)

**2:45 *Goldfish: Peer selection using Matrix completion in unstructured P2P network*** 

Bowen Xue (University of Washington, USA); Yifan Mao and Shaileshh Bojja Venkatakrishnan (The Ohio State University, USA); Sreeram Kannan (University of Washington Seattle, USA)

**3:10 *Braess Paradox in Layer-2 Blockchain Payment Networks*** 

Arad Kotzer and Ori Rottenstreich (Technion, Israel)

Thursday, May 4 4:05 - 5:30 (Asia/Dubai)

**Panel 3: Are private blockchains dead?** 

Distinguished Experts Panel

**Moderator: Salil Kanheer/Moayad Aloqaily**

**Panelists:**

**Burkhard Stiller (University of Zurich, Switzerland)**

**Artem Barger, Director, Eternzye IT Services, Budapest, Hungary (pending)**

**Raja Jayaraman (Associate Professor, Khalifa University, UAE)**

**Deepak Puthal (Assistant Professor, Khalifa University, UAE)**

Room: Ball Room

Friday, May 5

Friday, May 5 8:30 - 10:30 (Asia/Dubai)

**Crosschain-WK: Workshop Session 1** 

Ball Room 2

**8:30 *Analysis of recent bridge hacks using the Crosschain Risk Framework***

Ermyas Abebe (ConsenSys, Australia); Arjun Chand (LIFI, India)

**9:30 *LCP: IBC meets TEE to enable blockchain interoperability***

Hiroki Yasui and Ryo Sato (Datachain, Japan)

**10:30 *Bridge Aggregation in a Multi-Chain World***

Arjun Chand (LIFI, India); Mark Leigh Murdock (LIFI, USA)

**11:30 *Common Relay Messaging for Crosschain Function Calls***

Weijia Zhang (Wanchain, Australia)

## Friday, May 5 8:30 - 9:40 (Asia/Dubai)

### CryptoEx-WK: Short Paper Session ↗

Ball Room 1

**8:30 *The Web3 Financial De-Revolution: Mapping the Impact of Centralization on Exchange Implosion and Decentralization as a Survival Mechanism*** 

Brendan Gage (Simon Fraser University, Canada); Daniel C. Park ( & Animoca Brands & BRINC, Canada)

**8:45 *Staking Pools with Arbitrary Stake Distribution*** 

Manvir Schneider (ETH Zurich, Switzerland)

**9:00 *OrderBookVis: A Visualization Approach for Comparing Order Books from Centralized Crypto Exchanges*** 

Adrian Jobst and Daniel Atzberger (Hasso Plattner Institute, Digital Engineering Faculty, University of Potsdam, Germany); Robert Henker (XU Exponential University, Germany); Willy Scheibel and Jürgen Döllner (Hasso Plattner Institute - Digital Engineering Faculty - University of Potsdam, Germany)

**9:15 *Price Arbitrage for DeFi Derivatives*** 

Ivan Vakhmyanin (Datamint, United Arab Emirates); Yana Volkovich (Microsoft, USA)

## Friday, May 5 9:40 - 10:30 (Asia/Dubai)

### CryptoEx-Welcome: Welcome Address & Keynote Speech ↗

**Welcome Address, James Won-Ki Hong, CryptoEx 2023 Chair, POSTECH, Korea**

**Keynote Speech by Dr. Zayed Al Hemairy, Innovation & Blockchain Advisor, Dubai, UAE**

Ball Room 1

Friday, May 5 10:30 - 11:00 (Asia/Dubai)

## CryptoEx-WK: Poster Session 1

Ball Room 1

**10:30 *NFTs for Online Trading of Artworks*** 

Elsi Ahmadiéh (Lebanese University, Lebanon); Nour El Madhoun (ISEP Engineering School, France & Sorbonne Université, LIP6, France)

**10:45 *Proof-of-Federated-Learning-Subchain: Free Partner Selection Subchain Based on Federated Learning*** 

Boyang Li, Bingyu Shen and Yiyu Shi (University of Notre Dame, USA)


Friday, May 5 11:00 - 12:30 (Asia/Dubai)

## Crosschain-WK: Workshop Session 2

Ball Room 2

**11:00 *Considering Chainless Interoperability across Many Parachains*** 

Takaaki Yanagihara and Akihiro Fujihara (Chiba Institute of Technology, Japan)

**11:30 *Implementing Secure Bridges: Learnings from the Secure Asset Transfer Protocol*** 

Kjell-Erik Marstein, Alexandru Chiriac and Luke Riley (Quant Network, United Kingdom (Great Britain)); Thomas Hardjono (MIT, USA); Gilbert Verdian (Quant Network, United Kingdom (Great Britain))

**12:00 *Zipline - A Fault-Proof Blocker Header Oracle*** 

Willem C Olding (ChainSafe Systems, Australia); Eric Tu (ChainSafe Systems, Canada)

Friday, May 5 11:00 - 12:15 (Asia/Dubai)

## CryptoEx-WK: Technical Session 1

Ball Room 1

**11:00 *DEEPER: Enhancing Liquidity in Concentrated Liquidity AMM DEX via Sharing***



Srisht Fateh Singh, Panagiotis Michalopoulos and Andreas Veneris (University of Toronto, Canada)



**11:25 *Decentralized Exchanges: The Profitability Frontier of Constant Product Market Makers*** 

Tobias Bitterli (University of Basel & Greenmatch AG, Switzerland); Fabian Schär (University of Basel, Switzerland)

**11:50 *ALT: Aggregate Liquidity Technology*** 

Makoto Takemiya (SORAMITSU, Japan)

## Friday, May 5 1:03 - 2:30 (Asia/Dubai)

### Crosschain-WK: Workshop Session 3

Ball Room 2

**1:03 *CBDC bridging between Hyperledger Fabric and permissioned EVM-based blockchains*** 

André Augusto (Instituto Superior Técnico, Universidade de Lisboa, Portugal); Rafael Belchior (Instituto Superior Técnico & INESC-ID & Blockdaemon Ltd., Portugal); Imre Kocsis and Gönczy László (Budapest University of Technology and Economics, Hungary); André Vasconcelos (INESC-ID, Instituto Superior Técnico, Universidade de Lisboa, Portugal); Miguel Correia (INESC-ID & Instituto Superior Técnico, Portugal)

**1:23 *Toposware: Trust less, Connect more***

Antonella Del Pozzo (CEA LIST, France); Theo Gauthier (Toposware, USA)

**1:43 *Enhancing XCMP Interoperability Across Polkadot Paraverse*** 

Dušan Morháč, Viktor Valaštín, Kristián Košťál and Ivan Kotuliak (Slovak University of Technology, Slovakia)

## Friday, May 5 1:30 - 3:10 (Asia/Dubai)

### CryptoEx -WK: Technical Session 2

Ball Room 1

**1:30 *Structured Pools for Tokenized Carbon Credits*** 

Derek H Sorensen (University of Cambridge, United Kingdom (Great Britain))

**1:55 *A Referable NFT Scheme*** 

Qin Wang (CSIRO Data61, Australia); Guangsheng Yu (CSIRO, Australia); Shange Fu (Monash University, Australia); Shiping Chen (Commonwealth Scientific and

Industrial Research Organisation, Australia); Jiangshan Yu (Monash University, Australia); Xiwei Xu (Data61-CSIRO & UNSW, Australia)

**2:20 Gas Cost Analysis of Fractional NFT on the Ethereum Blockchain** 

Wonseok Choi, Jongsoo Woo and James Won-Ki Hong (POSTECH, Korea (South))

**2:45 Leveraging Architectural Approaches in Web3 Applications - A DAO Perspective Focused** 

Guangsheng Yu (CSIRO, Australia); Qin Wang and Tingting Bi (CSIRO Data61, Australia); Shiping Chen (Commonwealth Scientific and Industrial Research Organisation, Australia); Xiwei Xu (Data61-CSIRO & UNSW, Australia)

## Friday, May 5 3:10 - 3:40 (Asia/Dubai)

### CryptoEx-WK: Poster Session 2

Ball Room 1

**3:10 Secure Arbitrage Trades Between Centralized and Decentralized Exchanges** 

Marc Jansen (University of Applied Sciences Ruhr West, Germany)

**3:25 Circulogy: An AI-enabled blockchain-based e-Waste management Framework using Non-Fungible Tokens (NFT) to achieve net zero and imply the circular economy**



Md Mahmudul Hasan (Anglia Ruskin University, United Kingdom (Great Britain)); Nazia Hameed (University of Nottingham, United Kingdom (Great Britain)); Dipto Sarkar (Intellicreate, United Kingdom (Great Britain)); Rajesh Kumar (TrackGenesis, United Kingdom (Great Britain)); Javed Chowdhury (La Trobe University, Australia); Silvia Cirstea (Anglia Ruskin University, United Kingdom (Great Britain))

## Friday, May 5 3:40 - 5:20 (Asia/Dubai)

### CryptoEx-WK: Technical Session 3

Ball Room 1

**3:40 Examining Liquidity of Exchanges and Assets and the Impact of External Events in Centralized Crypto Markets: A 2022 Study** 

Adrian Jobst and Daniel Atzberger (Hasso Plattner Institute, Digital Engineering Faculty, University of Potsdam, Germany); Robert Henker (XU Exponential University, Germany); Jan Ole Vollmer (Independent Researcher, Germany); Willy Scheibel and

Jürgen Döllner (Hasso Plattner Institute - Digital Engineering Faculty - University of Potsdam, Germany)

**4:05 Rational Ponzi Games in Algorithmic Stablecoin** 

Shange Fu (Monash University, Australia); Qin Wang (CSIRO Data61, Australia); Jiangshan Yu (Monash University, Australia); Shiping Chen (Commonwealth Scientific and Industrial Research Organisation, Australia)

**4:30 Crypto Assets Custody: Taxonomy, Components, and Open Challenges** 

Zakwan Jaroucheh (Edinburgh Napier University & School of Computing, United Kingdom (Great Britain)); Baraq Ghaleb (Edinburgh Napier University, United Kingdom (Great Britain))

**4:55 Hephaistos: A Management System for Massive Order Book Data from Multiple Centralized Crypto Exchanges with an Internal Unified Order Book** 

Robert Henker (XU Exponential University Potsdam); Daniel Atzberger (Hasso Plattner Institute, Digital Engineering Faculty, University of Potsdam, Germany); Jan Ole Vollmer (Independent Researcher, Germany); Willy Scheibel (Hasso Plattner Institute - Digital Engineering Faculty - University of Potsdam, Germany); Jürgen Döllner (Digital Engineering Faculty, University of Potsdam); Markus Bick (ESCP Berlin, Germany)