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

 prerequisite

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

PS 2: Poster Session 2
PS 4: Poster Session 4

Panel 3: Are private blockchains dead?

ICBC 3: Analytics, Learning, and Applications
ICBC 4: Protocols, Policies, Compliance, Incentives

ICBC 8: Security and Privacy
ICBC 12: BC Protocols 2
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

Guowen 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 11:45 - 3:45 (Asia/Dubai)

ICBC 2: Crypto, NFTs, Prediction Markets
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
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)
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 Venkatakrishnan (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 Informática, Spain); Francesc D. Muñoz-Escoi
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**
Tuesday, May 2 1:30 - 2:45 (Asia/Dubai)

**ICBC 7: BC and Crypto Applications 1 [Top]**

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? [Top]**

Moderator: Adel/Bassem
Panelists:
- Vinayaka Pandit (STSM and Senior Manager - Blockchain Research, IBM India)
- Davor Svetinovic (Associate Professor, Khalifa University, UAE)
- Siddartha Banerjee, Kandola Network, India

Room: Ball Room

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

**PS 2: Poster Session 2 [Top]**

None
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**
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 Mangues-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 Dhrubajyoti 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 Beaugeard 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 (University 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
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 Sjursen, 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 Aloqaily (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
Thursday, May 4 11:15 - 12:30 (Asia/Dubai)

ICBC 14: Security and Privacy - Applications

Full Paper Session-9
TPD

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

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, Sevval 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, Eternyze 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
10:30 Bridge Aggregation in a Multi-Chain World  
Arjun Chand (LIFI, India); Mark Leigh Murdock (LIFI, USA)

11:30 Common Relayer Messaging for Crosschain Function Calls  
Weijia Zhang (Wanchain, Australia)

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

CryptoEx-WK: Short Paper Session

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. Zayeed Al Hemairy, Innovation & Blockchain Advisor, Dubai, UAE
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 Ahmadieh (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

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

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
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

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 (Inteliccreate, United Kingdom (Great Britain)); Rajesh Kumar (TrackGenesis, United Kingdom (Great Britain)); Jaben 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

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
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)