

IEEE CryptoEx 2023 Program

FRIDAY, MAY 5, 7:30 AM - 8:30 AM Registration

FRIDAY, MAY 5, 8:30 AM - 9:40 AM (Ballroom 1)

[SHORT PAPER SESSION \(Session Chair: Chae-Hyun Lee, POSTECH, Korea\)](#)

1. 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)

2. Staking Pools with Arbitrary Stake Distribution

Manvir Schneider (ETH Zurich, Switzerland)

3. 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)

4. Price Arbitrage for DeFi Derivatives

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

FRIDAY, MAY 5, 9:40 AM - 10:30 AM (Ballroom 1)

[WELCOME ADDRESS & KEYNOTE SPEECH \(Session Chair: James Hong, POSTECH, Korea\)](#)

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 AM - 11:00 AM

[POSTER SESSION & COFFEE BREAK \(Session Chair: Kyungchan Ko, POSTECH, Korea\)](#)

1. Secure Arbitrage Trades Between Centralized and Decentralized Exchanges

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

2. 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)); Jabed

Chowdhury (La Trobe University, Australia); Silvia Cirstea (Anglia Ruskin University, United Kingdom (Great Britain))

3. NFTs for Online Trading of Artworks

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

4. 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 AM - 12:15 PM (Ballroom 1)

[TECHNICAL SESSION 1 \(Session Chair: James Hong, POSTECH, Korea\)](#)

1. DEEPER: Enhancing Liquidity in Concentrated Liquidity AMM DEX via Sharing

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

2. Decentralized Exchanges: The Profitability Frontier of Constant Product Market Makers

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

3. ALT: Aggregate Liquidity Technology

Makoto Takemiya (SORAMITSU, Japan)

FRIDAY, MAY 5, 12:15 PM - 1:30 PM [LUNCH](#)

FRIDAY, MAY 5, 1:30 PM - 3:10 PM (Ballroom 1)

[TECHNICAL SESSION 2 \(Session Chair: Hongtaek Ju, KMU, Korea\)](#)

1. 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)

2. 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)

3. 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. 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)

FRIDAY, MAY 5, 3:10 PM - 3:40 PM

[POSTER SESSION & COFFEE BREAK \(Session Chair: Changhoon Kang, POSTECH, Korea\)](#)

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

2. 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))

3. NFTs for Online Trading of Artworks

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

4. 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, 3:40 PM - 5:20 PM (Ballroom 1)

[TECHNICAL SESSION 3 \(Session Chair: Andreas Veneris, U. of Toronto, Canada\)](#)

1. 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)

2. Gas Cost Analysis of Fractional NFT on the Ethereum Blockchain

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

3. 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)

4. Structured Pools for Tokenized Carbon Credits

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

FRIDAY, MAY 5, 5:20 PM - 5:50 PM (Ballroom 1)

[CLOSING REMARKS \(Session Chair: James Hong, POSTECH, Korea\)](#)