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)

   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 (Intelicreate, United Kingdom (Great Britain)); Rajesh Kumar (TrackGenesis, United Kingdom (Great Britain)); Jabe
Chowdhury (La Trobe University, Australia); Silvia Cirstea (Anglia Ruskin University, United Kingdom (Great Britain))

3. NFTs for Online Trading of Artworks
   Elsi Ahmadieh (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)
   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)**

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 (Inteliccreate, United Kingdom (Great Britain)); Rajesh Kumar (TrackGenesis, United Kingdom (Great Britain)); Jabeed Chowdhury (La Trobe University, Australia); Silvia Cirstea (Anglia Ruskin University, United Kingdom (Great Britain))

3. **NFTs for Online Trading of Artworks**
   Elsi Ahmadieh (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)**