**Special Session for CloudCom 2025**

**Title:** Sustainable Blockchain Systems on Distributed Clouds

**Organizers:**

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**Abstract:**

With the rapid proliferation of blockchain technology, Decentralized Finance (DeFi), Creator Economy, Decentralized Autonomous Organization (DAO), and other Web3 applications have ushered in a new digital interaction and value exchange paradigm. While these systems promise unprecedented decentralization, transparency, and user sovereignty, their long-term sustainability remains a critical challenge. This multi-faceted challenge encompasses technical scalability, economic viability, environmental impact, and robust governance. Crucially, the performance, security, and efficiency of these decentralized social-technical systems are deeply intertwined with the underlying cloud, edge, and distributed computing infrastructure they run on.

This Special Session aims to foster a cross-disciplinary dialogue on the foundational challenges of building sustainable and trustworthy socio-technical systems for the decentralized web. We will explore how innovations in cloud-native architecture, resource management, security, and AI can address the pressing sustainability issues in DeFi, DAOs, and beyond. Furthermore, we will delve into the emerging synergy of blockchain and AI, particularly in creating verifiable and trusted AI models deployed on distributed cloud environments. This session invites researchers and practitioners from both academia and industry to address these pivotal challenges, charting a course towards a more robust and sustainable decentralized future.

**Topics of Interest:**

We invite high-quality, original research submissions on topics including, but not limited to:

**1. Sustainable Blockchain Architectures and Protocols:** Design and analysis of energy-efficient consensus, cloud-native architectures, and green validator operations on distributed cloud/edge infrastructure.

**2. Performance Optimization and Resource Management:** Modeling, analysis, and optimization of blockchain systems' performance, scalability, and carbon footprint in cloud environments.

**3. Sustainable DeFi and Stablecoins:** Design, stability analysis, and risk management of sustainable Decentralized Finance (DeFi) protocols and stablecoin mechanisms.

**4. Tokenomics and Economic Sustainability:** Modeling of token economics, incentive mechanisms, and infrastructure strategies for long-term project viability and Real-World Asset (RWA) tokenization.

**5. Blockchain-enabled Trustworthy AI Systems:** Utilizing blockchain for verifiable models, decentralized data governance, auditable provenance, and robust incentive mechanisms for AI applications on cloud platforms.

**6. Sustainable Governance and Security:** Sustainable and scalable governance models for Decentralized Autonomous Organizations (DAOs), combined with formal verification and automated security auditing for smart contracts and protocols.

**7. Metrics, Standards, and Best Practices**: Development of novel sustainability metrics, ESG (Environmental, Social, Governance) standards, and benchmarking methodologies for the Blockchain ecosystem.

8. **Real-World Applications for Sustainability**: Demonstrating long-term viability and impact through Blockchain applications in areas such as sustainable energy systems, equitable finance, trustworthy supply chains, and innovative social governance.

**Format and Duration:**

[Specify the format (e.g., paper presentations, keynotes, panels) and the expected duration (half-day or full-day).]

**Expected Number of Submissions:**

[Estimate the number of submissions you expect to receive.]

**Previous Editions:**

N/A

**Program Committee (Tentative):**

• Dr. Sizheng Fan, Peking University, China

• Jeffrey Hu, HashKey Capital, Hong Kong

• Dr. Lehao Lin, The Chinese University of Hong Kong, Shenzhen, China

• Prof. Yunwen Liu, KU Leuven, Belgium

• Dr. Bruno Woltzenlogel Paleo, The Stable Order, Multiple Countries

• Dr. Jinghan Sun, University of Wollongong in Dubai, United Arab Emirates

• Shiman Wang, PricewaterhouseCoopers (PWC), China

• Dr. Hao Wu, The Chinese University of Hong Kong, Shenzhen, China

• Dr. Ren Zhang, Cryptape and Nervos, China

• Dr. Rong Zhao, Shenzhen Institute of Information Technology, China

**Important Dates:**

• Paper Submission: September 6, 2025

• Notification of Acceptance: October 4, 2025

• Camera-Ready: October 30, 2025

**Contact:**

For any questions regarding this proposal, please contact:

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