

Thesis Defense
for
Master of Science Degree
in Computer Science

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**Consensus for creating lightweight
blockchain for IoT**

Abstract:

Blockchain in IoT offers decentralized solutions, reducing reliance on centralized authorities for improved scalability and reliability. However, traditional consensus methods like PoW and PoS present challenges such as high energy consumption and reliance on trusted entities. To address this, trust-free probabilistic consensus methods like PoEWAL enable active participation of all nodes, enhancing transaction robustness. PoEWAL is tailored for resource constrained IoT devices, aiming for minimal energy consumption and low latency. Experiments were conducted using the Contiki Cooja simulator to validate its feasibility across various difficulty levels. Comparative analysis with other consensus methods confirms PoEWAL's suitability, striking a balance between energy efficiency, consensus speed, and network performance. Positioned as a promising solution, PoEWAL addresses IoT's unique challenges, empowering efficient blockchain implementation in IoT environments.””

Monday, March 25, 2024
3:00 - 4:00 PM
Engineering A-Wing Rm A309C

Committee Members: Dr. Hexmoor Henry Dr. Koushik Sinha
Dr. Bidyut Gupta