

**CHENNAI – PONDICHERRY**

**MOTIVATING CONTENT SHARING AND TRUSTWORTHINESS IN MOBILE SOCIAL NETWORKS**

**Abstract:**

Mobile social networks (MSNs) enable users to discover and share contents with each other, especially at ephemeral events such as exhibitions and conferences where users could be strangers. Nevertheless, the incentive of users to actively share their contents in MSNs may be lacking if the corresponding cost is high. Besides, as users in MSN share contents in an impromptu way as they move, it makes them vulnerable to malicious users who may want to disseminate false contents. This is because users may not have knowledge about the peers they are socially connecting with in the network. In this paper, we propose MCoST, a mechanism that motivates content sharing in MSN and ensures that only trustworthy contents are shared. The mechanism is built on users’ collective bidding, content cost sharing and trust evaluation while guaranteeing individual rationality. MCoST enables content providers to share contents with multiple users simultaneously by utilizing the broadcast nature of wireless transmission. The cost of the content is collectively compensated by the content receivers through the content bidding mechanism in MCoST. In ensuring that users can establish the trustworthiness of their encounters’ contents, MCoST incorporates a robust trust evaluation framework that guarantees that content reviews are immutable and tamper-proof, resistive to sybil and rejection attacks, and that users cannot have multiple and fake identities in the network or reject negative reviews about their contents. This is achieved by integrating a distributed cryptographic hash-chained content review mechanism in the design of MCoST. Performance evaluation shows that the proposed mechanism efficiently evaluates contents’ trustworthiness by detecting and discriminating review-chains under sybil or rejection attacks and reduces the time and cost to collect the desired contents by 86% and 40% respectively, and improves network utilization by 50%.