

DEFINING SERVICE ORIENTED TRUST ASSESSMENT FOR SOCIAL INTERNET OF THINGS



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by

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APPROVAL SHEET

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ABSTRACT

The rapid advancements in the field of Internet and Social Networks have brought us to the edge of a real time connected world. In result of that, a new paradigm named Social Internet of Things (SIoT) is born. In SIoT, Social Networks merge with Internet of Things (IoT) to facilitate information and resource sharing among devices in an improved way. Devices seek and provide services among their *friends* or *friends-of-friends*. However, the users of this fascinating paradigm must be suspicious of their trust and privacy. Hence, Trust assessment becomes one of the primary challenges to ensure a reliable information discovery and exchange. In the System Architecture of SIoT, the task of trust assessment is responsibility of a module named *Trustworthiness Management*. This module resides on the application layer of SIoT Server and it closely works with modules, *Service Discovery* and *Service Composition*. We aim to define Service oriented trustworthiness assessment scheme for SIoT. This assessment is primarily focused on Service rather than Service Provider. To the best of our knowledge, this is a novel proposition in SIoT. We have proposed a parameter named *Service Trust* which is based on aggregation of multiple QoS parameters. This parameter is mathematically modeled. Due to lack of a real world SIoT Datasets based on Trust and the infancy of this field, we have used a real-world Bike Sharing company dataset for evaluation. The results attained after analysis are positive. A short Scenario-Based Analysis follows the dataset evaluation. Finally, conclusion and future work is presented.

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