

**CHENNAI – PONDICHERRY**

**Recurring Contacts Between Groups of Devices: Analysis and Application**

**Abstract:**

The capability to anticipate a contact with another device can contribute to improve the performance and user satisfaction of mobile social network applications and of any other relying on some form of data harvesting or hoarding. This paper presents a 9 year data set of wireless access logs produced by more than 70000 devices and 40000 users. Research on the recurring contact patterns observed between groups of devices permitted to model the probabilities of occurrence of a contact at a predefined date between pairs of devices. As an example, the paper presents and evaluates an algorithm that provides daily contact predictions, based on the history of past pairwise contacts and its application on a reputation service.

**Existing System:**

A contact is usually defined as a moment where two devices are within transmission range or can communicate mediated by a single Access Point (AP). Contact patterns are usually estimated by applying a statistical fitting on multiple metrics of a data set produced by a population of individuals. The goal is to find a statistical distribution that provides a good approximation to the metrics of interest and that can be evaluated in run-time. One of the most frequently cited metrics is the inter-contact time (ICT), defined as the time interval between two consecutive contacts of the same two peers. ICT is used in multiple applications and frequently modelled using a power law distribution

An excessive focus on ICT can limit the range of optimisation strategies made available for application developers. The capability to predict recurring contacts between groups with more than 2 elements or the number of devices in proximity would allow social networks, user assistance applications, geo-replicated databases and even Machineto- Machine (M2M) networks to minimise data redundancy in cooperative caching, improve availability and reduce communication cost.

**Proposed System:**

The paper proposes an application of the ranking algorithm on a reputation management service for mobile applications. The goal is to improve the service performance without increasing the number of contacts to a centralised reputation server. To address this goal the ranking algorithm is used to anticipate future contacts, improving the hit rate of the cache of reputation information. Results show that the ranking algorithm can contribute to improve rogue devices detection.