48. Direction aware personalized privacy preservation framework in participatory sensing

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Subtheme: Computing and Informatics - Leveraging Computing and informatics Technologies for Climate adaptation and resilience

Abstract

Mobile phone users in participatory sensing systems are requested to collect information from their nearby locations. The user's location should be concealed all the times. Several techniques in participatory sensing have been proposed recently to provide user protection. These techniques ignore the fact that mobile users in most cases are not stationary but rather moving objects, characterized by inevitable time varying uncertainty changes. Besides, they do not treat each user as an individual with special privilege. Users have personalized privacy requirements whose violation by other peers results in unauthorized access of information hence a privacy intrusion. The knowledge of user movement by an adversary poses privacy threats in participatory sensing systems. Existing techniques tend to protect mobile users against being identified by associating their queries with query location and background information, paying no attention to impacts of movement on privacy. We propose direction aware personalized privacy preservation framework in participatory sensing. In this paper mobile objects are assigned tocollect data in stated moving directions.

Keywords: *Direction, directional attacks, participatory sensing, prediction, privacy conditions*