

Abstract

Due to the wide availability of location-based services (LBSs), it becomes possible to trace the location of an individual by an adversary especially when the LBSs server is untrusted. k -anonymity is a well-known approach that is used to protect personal location privacy. This thesis introduces a novel user-based location selection scheme (UBLS) to hide the user location based on the k -anonymity. The proposed scheme uses the concept of dummy locations, but on top of that, it selects the dummy locations based on users that exist in these locations. We compare the proposed scheme with the well-known dummy location selection (DLS), enhanced dummy location selection (EDLS) and moving in neighborhood (MN) schemes, and it shows comparable performance to those schemes in terms of entropy metric, cloaking region metric and the location privacy level (LPL) metric. However, the proposed UBLS scheme significantly outperforms the DLS scheme in terms of the entropy metric whenever the number of users is low. And, our proposed scheme shows significant improvement over the EDLS scheme in terms of the LPL metric.