Statistical Disclosure Control for Data Privacy Preservation

Abstract

With the phenomenal change in a way data are collected, stored and disseminated among various data analyst there is an urgent need of protecting the privacy of data. As when individual data get disseminated among various users, there is a high risk of revelation of sensitive data related to any individual, which may violate various legal and ethical issues. Statistical Disclosure Control (SDC) is often applied to statistical databases for preserving the privacy of individual data. Microaggregation is an efficient Statistical Disclosure Control perturbative technique for microdata protection i. e. protection of individual data. Unlike k-Anonymity, microaggregation method modifies data without suppressing or generalizing it. But to prevent the disclosure of sensitive data it should not be modified to an extent that the data utility is affected. So, the major challenge is how to perturb the data in such a way that a balance is maintained between data utility and risk of data disclosure. Here in this paper, we have proposed a new SDC method based on multivariate data-oriented microaggregation technique for individual data protection with minimal information loss and low data disclosure risk. Experimental results show that our proposed method proves our claim as when compared with other state-of art existing methods of data protection.
References

- R. Brand, J. Domingo-Ferrer & J. M. Mateo-Sanz, "Reference data sets to test and compare sdc methods for protection of numerical microdata," European Project


Index Terms

Computer Science
Information Sciences

Keywords

SDC  Microaggregation  information loss  data disclosure risk  microdata perturbative

k-Anonymity.