# Parameterized Complexity Of K Anonymity Hardness And

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(PDF) Parameterized Complexity of the k-anonymity Problem

The problem of publishing personal data without giving up privacy is becoming increasingly important. An interesting formalization that has been recently proposed is ...

Parameterized complexity of k-anonymity
In this paper we study how the complexity of the problem is influenced by different parameters. First we show that the problem is W[1]-hard when parameterized by the value of the solution (and k). Then we exhibit a fixed-parameter algorithm when the problem is parameterized by the number of columns and the number of different values in any column.

Parameterized Complexity of the k-anonymity Problem
Parameterized Complexity of the k-anonymity Problem By Stefano Beretta, Paola Bonizzoni, Gianluca Della Vedova, Riccardo Dondi and Yuri Pirola No static citation data No static citation data Cite

A refined complexity analysis of degree anonymization in ...
Based on this, we develop a polynomial-time data reduction yielding a polynomial-size problem kernel for Degree Anonymity parameterized by the maximum vertex degree. In terms of parameterized complexity analysis, this result is in a sense tight since we also show that the problem is already NP-hard for H-index three, implying NP-hardness for smaller parameters such as average degree and degeneracy.

The complexity of degree anonymization by ... - ScienceDirect
Hardness of k-anonymity. Optimal k-anonymity:Given a list of records, minimize the number of fields suppressed, such that for each record r, there are k 1 other records that are indistinguishable from r. We will give a reduction from k-dimensional perfect matching to the above problem.

A refined complexity analysis of degree anonymization in ...

On the Complexity of Optimal K-Anonymity ... We will see that k-anonymity admits a very clean formalization; it is simple to propose, and has a concrete privacy parameter k within its definition. In this work, we will consider the complexity of rendering relations of private records k-anonymous, ...

Parameterized Complexity of the k-anonymity Problem - CORE
This last work is of particular interest, as the concept of k-anonymity is a generalization of the notion of regularity (in particular, a graph is n-anonymous if and only if it is regular). Studying graph contractions in the context of degree anonymization is in- teresting for several reasons.

On the Complexity of Optimal K-Anonymity - Desfontain
The parameterized complexity of k-anonymity has also been studied in [6] [7] [11] with respect to different parameters. Meyerson and Williams [21] gave an O(k log k) approximation algorithm for k ...

Parameterized complexity of k-anonymity: hardness and ...
of the parameterized complexity of the k-anonymit y problem has been proposed in [7]. Here, we follow the same direction, sho wing that the problem is W[1]-hard when parameterized by the

Parameterized Complexity of k-Anonymity: Hardness and ...
Abstract The problem of publishing personal data without giving up privacy is becoming increasingly important. A precise formalization that has been recently proposed is the k-anonymity, where the rows of a table are partitioned in clusters of size at least k and all rows in a cluster become the same tuple after the suppression of some entries.

On the Complexity of Optimal -Anonymity K

A parameterized problem that allows for such an fpt-algorithm is said to be a fixed-parameter tractable problem and belongs to the class FPT, and the early name of the theory of parameterized complexity was fixed-parameter tractability . Many problems have the following form: given an object x and a nonnegative integer k,...

Parameterized Complexity of k-Anonymity: Hardness and ...

parameterized complexity of k-Anonymity on tabular data with numerous tractability and intractability results [5,6,9,17]. 2. Preliminaries Parameterized complexity. A parameterized problem is called xed-parameter tractable if there is an algorithm that decides any instance (I;k), consisting of the \classical" instance Iand a parameter k2N

Parameterized complexity - Wikipedia

In this paper we study how the complexity of the problem is influenced by different parameters. First we show that the problem is W[1]-hard when parameterized by the value of the solution (and k). Then we exhibit a fixed-parameter algorithm when the problem is parameterized by the number of columns and the number of different values in any column.

Parameterized Complexity Of K Anonymity

A precise formalization that has been recently proposed is the k-anonymity, where the rows of a...

Parameterized complexity of k-anonymity: hardness and tractability | SpringerLink Skip to main content

The Effect of Homogeneity on the Complexity of k-Anonymity
The main result there is a fixed-parameter tractable algorithm with respect to the maximum degree in the input graph. The problem of k -anonymizing an input graph by performing as few edge modification as possible, that is, edge switchings, edge deletions, and edge additions, was studied by Casas-Roma et al.

(PDF) Parameterized Complexity of the k-anonymity Problem ...
Parameterized Complexity of the k-anonymity Problem: Authors: Beretta, Stefano ... In this paper we study how the complexity of the problem is influenced by different parameters. ... when the problem is parameterized by the size of the alphabet and the number of columns. Finally, we investigate the computational (and approximation) complexity ...

A Refined Complexity Analysis of Identity Anonymization on ...
Parameterized complexity. A parameterized problem is called fixed-parameter tractable if there is an algorithm that decides any instance (I, k), consisting of the "classical" instance I and a parameter k  N 0, in f (k)  | I | O (1) time, for some computable function f solely depending on k.

Parameterized Inapproximability of Degree Anonymization
The concept of parameterized complexity was pio- neered by Downey and Fellows [7] (see also [8, 21] for more recent textbooks). 0, in f(k) jIjO(1) time, for some computable function fsolely depending on k. A core tool in the development of xed-parameter algorithms is polynomial-time kernelization [3, 12].

The Complexity of Degree Anonymization by Graph Contractions
the k-anonymity concept from tabular data in databases [11] to graphs. Herein, Liu and Terzi [15] require that a released graph contains for every vertex at least k□1 other vertices with the same degree.