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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

Parameterized complexity of k-anonymity: hardness and ...

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Parameterized Complexity of the k-anonymity Problem

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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 interesting for several reasons.

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.

Parameterized Inapproximability of Degree Anonymization

The concept of parameterized complexity was pioneered by Downey and Fellows [7] (see also [8, 21] for more recent textbooks). $O(f(k) \cdot |I|)$ time, for some computable function f solely depending on k . A core tool in the development of fixed-parameter algorithms is polynomial-time kernelization [3, 12].

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 $k \in \mathbb{N}$, in $f(k) \cdot |I|$ time, for some computable function f solely depending on k .

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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 al-

ready NP-hard for H-index three, implying NP-hardness for smaller parameters such as average degree and degeneracy.

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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, ...

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 ...

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.

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.

On the Complexity of Optimal K-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 - 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.

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