

## Parameterized Complexity Of K Anonymity Hardness And

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### Parameterized Complexity Of K Anonymity

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

#### (PDF) Parameterized Complexity of the k-anonymity Problem ...

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: Hardness and ...

of the parameterized complexity of the k-anonymity problem has been proposed in [7]. Here, we follow the same direction, showing that the problem is W[1]-hard when parameterized by the

#### (PDF) Parameterized Complexity of the k-anonymity Problem

A precise formalization that has been recently proposed is the k-anonymity, where the rows of a table are partitioned into clusters of sizes at least k and all rows in a cluster become the same tuple after the suppression of some entries.

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

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

#### Parameterized Complexity of the k-anonymity Problem - CORE

We investigate the parameterized complexity of (k, c) - Attribute-Anonymity, parameterized by k and c, is not in FPT unless W [ 2 ] = FPT.

#### k-Attribute-Anonymity is hard even for k=2 - ScienceDirect

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) · |O(I)| time, for some computable function f solely depending on k.

#### A refined complexity analysis of degree anonymization in ...

k-anonymity is a property possessed by certain anonymized data. The concept of k-anonymity was first introduced by Latanya Sweeney and Pierangela Samarati in a paper published in 1998 as an attempt to solve the problem: "Given person-specific field-structured data, produce a release of the data with scientific guarantees that the individuals who are the subjects of the data cannot be re-identified while the data remain practically useful." A release of data is said to have the k-anonymity property

#### k-anonymity - Wikipedia

Degree Anonymity is W-hard parameterized by the number of inserted edges s, even if k= 2. 4 Polynomial Kernel for the Maximum Degree In this main section we provide a polynomial kernel with respect to the parameter maximum degree (Theorem 4).

#### A Refined Complexity Analysis of Identity Anonymization on ...

In computer science, parameterized complexity is a branch of computational complexity theory that focuses on classifying computational problems according to their inherent difficulty with respect to multiple parameters of the input or output. The complexity of a problem is then measured as a function of those parameters. This allows the classification of NP-hard problems on a finer scale than ...

#### Parameterized complexity - Wikipedia

2.1 Parameterized Complexity An instance (I,k) of a parameterized problem consists of the "classical" problem instance I and an integer k being the parameter [13,21].

#### The Complexity of Degree Anonymization by Graph Contractions

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 ...

#### A refined complexity analysis of degree anonymization in ...

k-Anonymity inO(nm+2t·int·out·in(t·outm+12·in·log(t·in))) time,whichcompares favorably with Bonizzoni et al.'s [5] algorithm running in O(2^(j+1)·m·k·m^2) time.Sincet out t in,thisshowsthatk-Anonymity isfixed-parametertractable whenparameterizedbyt in.Inparticular,when in isaconstant,ouralgorithm solvesk-Anonymity intimeinear inthesizeoftheinput.Incontrast,when

#### TheEffectofHomogeneityontheComplexity of k-Anonymity

The case of arbitrary k is the natural parameterization of Subset Sum and is well-known in parameterized algorithms and complexity. We present new FPT reductions between the k-SUM problem and the...

#### (PDF) On the parameterized complexity of k-SUM

Concerning the parameterized complexity, we prove that the problem is W[1]-hard when parameterized by the cost-bound, by l, and by the size of the alphabet. Then we prove that the problem admits a fixed-parameter algorithm when both the maximum number of different values in a column and the number of columns are parameters.

#### The l-Diversity problem: Tractability and approximability ...

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, while minimizing the amount of information that is not released. That is, we

#### On the Complexity of Optimal K-Anonymity - Desfontain

The technique used by our algorithm can also be used to obtain faster deterministic algorithms for k-Tree, r-Dimensional k-Matching, Graph Motif, and Partial Cover. Subjects: Data Structures and Algorithms (cs.DS)

#### Faster deterministic parameterized algorithm for k-Path

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, while minimizing the amount of information that is not released.

#### On the Complexity of Optimal K-Anonymity

Parameterized Complexity. Due to space restrictions, we only give the basic notions of Parameterized complexity (used in this paper) and refer to [9] for further related definitions. A parameterized problem is a language L ⊆ Σ<sup>N</sup>, where Σ is a fixed alphabet and N is the set of natural numbers. For an input (x,k) ∈ Σ<sup>N</sup> × N, k is called the parameter.