

# Distributed System Invoke the Cloud Computing in Web Services using Caching

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## Abstract

Cloud computing is sought after for its reduced infrastructure and implementation costs. Following the cloud infrastructure as a Service paradigm and in order to create a flexible management framework. The rise in the usage of cloud computing also gave rise to privacy and security concerns. Concerns like data leakage are pretty common and can affect the original data owners drastically. Many traditional systems Upper Bound Privacy Leakage Constraint-Based approach to identify which intermediate data sets need to be encrypted and which do not. The method of encryption to hide the data and their respective data sets to ensure privacy and security. This method is not economically feasible as it involves encrypting every data over the cloud which is a huge collection of data. We propose the Signature Generation Algorithm (SGA) to authenticate the data access from the cloud to ensure the security of the data over cloud and their data sets. Evaluation results demonstrate that the secrecy and privacy of the data stored over the network is achieved efficiently and effectively.

**Keywords:** Cloud computing, data storage privacy, Signature Generation Algorithm (SGA).

## I. INTRODUCTION

With the rapid growth of information within organizations, ranging from hundreds of gigabytes of satellite images to terabytes of commercial transaction data, the demands for processing such data are on the rise. Meeting such demands requires an enormous amount of low-cost computing resources, which can only be supplied by today's commercial cloud-computing systems: as an example, Amazon Elastic Compute Cloud (EC2) can easily handle terabytes of data at a price as low as 0.015 dollar per hour. This newfound capability, however, cannot be fully exploited without addressing the privacy risks it brings in: on one hand, organizational data contains sensitive information (e.g., financial data, health records, etc.) and therefore cannot be shared with the cloud provider without proper protection; on the other hand, today's commercial clouds do not offer high security assurance, a concern that has been significantly aggravated by the recent incidents of Amazon outages [1] and the Sony PlayStation network data breach [10], and tend to avoid any liability [3]. As a result, attempts to outsource the computations involving sensitive data are often discouraged.

A natural solution to this problem is cryptographic techniques for secure computation outsourcing, which has been studied for a decade [8]. However, existing approaches are still not up to the challenge posed by data-intensive computing. For example, homomorphism encryption [9] was found to be prohibitively expensive for a large-scale computation [5]. As another example, the secret-sharing techniques underlying most outsourcing proposals can lead to intensive data exchanges between the share holders on different clouds during a computation involving an enormous amount of data, and are therefore hard to scale.

## II. PROBLEM BACKGROUND

With a rapid development and acceptability of computer vision based systems in ones daily life, securing of the visual data has become imperative. Security issues in computer vision primarily originates from the storage, distribution and processing of the personal data, whereas privacy concerns with tracking down of the user's activity. The ideal solution to overcoming all privacy and security concerns is to apply strong cryptographic encryptions, thus destroying any pattern that would be present in that data. Pattern recognition, which is inherent to computer vision algorithms, however exploits the strong structure (pattern) present in the data. It seems that there exists a contradiction in the objectives of these two disciplines. Applying a strong encryption to this would destroy the structure, thus making any pattern recognition task on the encrypted data difficult. In order to overcome this limitation, solutions have been proposed that make a compromise between privacy and accuracy. Transformation functions are applied to the data, such that they retain the pattern, while providing partial privacy. The current methods of securing an online protocol is to apply a cryptographic layer on top of an existing processing module, thus securing the data against unauthorized third party access. However, this is often not enough to ensure the complete security of the user's privileged information. In the world of Internet, a new service sector has emerged, where a service provider gives the user with access to a server running a particular vision algorithm. In some scenarios, the client may be reluctant to reveal the content of the image to the processing server, yet

would like to fully utilize the service, while at the same time the service provider would like to protect his own interests, i.e. the algorithm from being made public.

### III. PROPOSED METHOD

Our Security Goal we aim to strengthen the security and privacy of the visual algorithms without making a compromise on the efficiency and efficacy of the solutions. The three primary issues in designing the privacy preserving protocols are i) security and privacy, ii) efficacy, and iii) efficiency. Hence, we analyze the secure algorithms for the security, correctness and complexity.

- Correctness is measured by comparing the proposed protocol to the ideal protocol where the parties transfer their data to a trusted third party that performs the computations. If the secure protocol is identical to the ideal protocol then the protocol is declared correct.

- In security one needs to show what can and cannot be learned from the data exchange between the parties. One often assumes that the parties are honest but curious, meaning that they will follow the agreed upon protocol but will try to learn as much as possible from the data flow between the two parties.

- In complexity, one shows the computational and communication complexity of the secure algorithm. For practical applications, the overheads of the proposed solution should be minimal as compared to the ideal solution.

We use the semi-honest adversary model that is the parties' follow the protocol but they want to reveal the other party's privacy. Our goal is to design protocols for preserving the party's privacy against such adversaries during the execution of the protocol. Each party learns nothing about the others data, except the output results. Both privacy and correctness are needed to be preserved. Forces against the secularism and human rights in not only in India and elsewhere.

### IV. CONCLUSION

In accordance with various data and computation intensive applications on cloud, intermediate data set management is becoming an important research area. Privacy preserving for

intermediate data sets is one of important yet challenging research issues, and needs intensive investigation. With the contributions of this paper, we are planning to further investigate privacy aware efficient scheduling of intermediate data sets in cloud by taking privacy preserving as a metric together with other metrics such as storage and computation.

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