A

Major Project
Report

on

SIMILARITY SEARCH FOR ENCRYPTED IMAGES IN SECURE CLOUD COMPUTING

Submitted to

Jawaharlal Nehru Technological University, Hyderabad

in partial fulfilment of the requirements for the award of Degree of

Bachelor of Technology

in

Computer Science & Engineering

by

VALLALA SAMATHA	(196Y1A05A8)
SURYADEVARA REETHIKA	(196Y1A0598)
ROMANA TAFHEEM	(196Y1A0586)
NAGOTHU HARSHITHA	(196Y1A0568)

Under the guidance

of

T. SRAVANTHI
Asst. Professor

Department of Computer Science & Engineering

SUMATHI REDDY INSTITUTE OF TECHNOLOGY for WOMEN

(Approved by AICTE, New Delhi; Affiliated to JNTU, Hyderabad)

Ananthasagar(Vill), Hasanparthy(M), Warangal – 506 371(T.S.), Website : www.sritw.org

2022-2023

S.R.I.T. FOR WOMEN ★ WARANGAL ★

Rajaiah

PRINCIPAL
Sumathi Reddy Institute of Technology for Women
Ananthasagar (V), Hasanparthy (M)
WARANGAL - 506 371 (T.S.)

SUMATHI REDDY INSTITUTE OF TECHNOLOGY for WOMEN

(Approved by AICTE, New Delhi, Affiliated to JNTU, Hyderabad)

Ananthasagar(Vill), Hasanparthy(M), Warangal – 506 371(T.S.), Website : www.sritw.org

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CERTIFICATE

This is to certify that the project entitled **"SIMILARITY SEARCH FOR ENCRYPTED IMAGES IN SECURE CLOUD COMPUTING"** is submittedby ***V. Samatha (196Y1A05A8)***, ***S. Reethika (196Y1A0598)***, ***Romana Tafheem (196Y1A0586)*** and ***N. Harshitha (196Y1A0568)*** in the partial fulfilment of requirement for the award of degree of Bachelor of Technology in Computer Science and Engineering during academic year 2022-2023.

7-7-2023

T. SRAVANTHI
Project Guide

Dr. E. SUDARSHAN
Head of the Department

External Examiner

S.R.I.T. FOR WOMEN ★ WARANGAL ★

PRINCIPAL
Sumathi Reddy Institute of Technology for Women
Ananthasagar (V), Hasanparthy (M)
WARANGAL - 506 371 (T.S.)

ABSTRACT

With the emergence of intelligent terminals, the Content-Based Image Retrieval (CBIR) technique has attracted much attention from many areas (i.e., cloud computing, social networking services, etc.). Although existing privacy-preserving CBIR schemes can guarantee image privacy while supporting image retrieval, these schemes still have inherent defects (i.e., low search accuracy, low search efficiency, key leakage, etc.). To address these challenging issues, in this paper we provide a similarity Search for Encrypted Images in secure cloud computing (called SEI). First, the feature descriptors extracted by the Convolutional Neural Network (CNN) model are used to improve search accuracy. Next, an encrypted hierarchical index tree by using K-means clustering based on Affinity Propagation (AP) clustering is devised, which can improve search efficiency. Then, a limited key-leakage k-Nearest Neighbor (kNN) algorithm is proposed to protect key from being completely leaked to untrusted image users. Finally, SEI is extended to further prevent image users' search information from being exposed to the cloud server. Our formal security analysis proves that SEI can protect image privacy as well as key privacy. Our empirical experiments using a real-world dataset illustrate the higher search accuracy and efficiency of SEI.

Principal
Sumathi Reddy Institute of Technology for Women
Ananthasagar (V), Hasanparthy (M)
WARANGAL - 506 371 (TS)