

INSIGHT STUDY OF VARIOUS MODEL USED FOR ONLINE ANALYTICAL PROCESS

A Thesis

Submitted towards the Requirement for the Award of Degree of

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IN

COMPUTER SCIENCE AND APPLICATION

Under the Faculty of Computer Science and Application

By

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ANJANA YADAV
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“LIST OF ABBREVIATION”

ACO	-	Ant Colony Optimization
ALO	-	Ant Lion Optimization
CF	-	Configuration
CS	-	Consistency
DFOC	-	Dragon Fly Optimization based Clustering
ER	-	Entity Relationship
ETL	-	Extraction Transformation Loading
FA	-	Foodstuff sources Appeal
FFO	-	Fruit Fly Optimization
GA	-	Genetic Algorithm
GWO	-	Grey Wolf Optimization
HOLAP	-	Hybrid Online Analytical Process
HTML	-	Hyper Text Mark-up Language
IoMT	-	Internet of Medical Things
IoT	-	Internet of Thing
IT	-	Information Technology
K-SSOC	-	KMeans-Salp Swarm Optimization based Clustering
KPIs	-	Key Performance Indicators
MAC	-	Multidimensional Aggregation Cube
MATLAB	-	Matrix Laboratory
MOLAP	-	Multi-dimensional Online Analytical Process
MS	-	Maintenance Spending
OE	-	Opponent Escaping
OLAP	-	Online Analytical Process
OLTP	-	Online Transactional Processing
PDF	-	Portable Document Format
PSO	-	Particle Swarm Optimization
RDBMS	-	Relational Data Base Management System
ROLAP	-	Relational Online Analytical Process
SBI	-	Social Business Intelligence

SQL	-	Structured Query Language
SR	-	Standard Severance
UML	-	Unified Modeling Language
WMS	-	Whole Maintenance Spending
WQS	-	Whole Query Spending
WSF	-	Whole Maintenance Function
XML	-	Extensible Mark-up Language

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COURSE WORK CERTIFICATE

This is to certify that **AnjanaYadav**(Enrollment No.161595506208) D/O **Mr.J.C.Yadav**,Scholar of the Ph.D in Department Of Computer Science and Application Under the faculty of Computer Science and Application has successfully passed the course work examination with 'A' grade from P.K.University, Shivpuri (M.P.).

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"ABSTRACT"

The Online Analytical Processing (OLAP) based Multidimensional examination hassles for several stockpiling magnificence over huge data. For as much to recognize queries answering time companionable by OLAP framework users and understanding entire business perceive mandatory, OLAP data is structured as a data cube (a multidimensional model). The OLAP queries are responded in speedy and steady time by utilizing the cube materialization for assessments takers. But, this also involves unendurable expenses, regarding to stockpile memory and period, and as a data depot, OLAP has an average dimension and dimensionality which is to be significant on query processing. Consequently, cube assortment has got to be finished motivating to diminish inquiry management expenses, maintaining as a restraint the materializing gap. Several techniques and heuristics like deviationist and insatiable algorithms have been utilized to offer an estimated result. In this work, a Fruit Fly Optimization (FFO) approach is implemented in a lattice structure to obtain an optimal materialized data cube for reducing the query processing expenses. The results illustrate that FFO generates better performance than Particle Swarm Optimization (PSO) in terms of frequency and number of dimensions.

The data cube assessments dependent on Online Analytical Processing (OLAP) trouble for numerous depositing splendors over broad information. In favor of appreciating question answering era pleasant with OLAP skeleton patrons and allowing complete industry organized notice compulsory, OLAP information is organized as a data cube model. The OLAP questions are answered in rapid and sturdy time by exploiting the cube embodiment for appraisals buyers. Until now this moreover insets insupportable charge, concerning to accumulation remembrance and time, yet as a data storage area had a typical length and extent which will be influential on stimulating procedure. Thus, cube classification has visited to be refined fascinating to moderate question managing charge, preserving as a control the materializing breach. Numerous strategies and heuristics like divergence and voracious approaches have been exploited to suggest a vague solution. Here, a Grey Wolf Optimization (GWO) strategy is exploited in a lattice structure for finding the best data cube to decrease the question processing charge. The outputs describe the superior efficiency of GWO against GA, PSO and ALO based on total dimensions and frequency.

Medicine is a fresh way to utilize for curing, analyzing and detecting the diseases through data clustering with OLAP (Online Analytical Processing). The large amount of multidimensional clinical data is reduced the efficiency of OLAP query processing by enhancing the query accessing time. Hence, the performance of OLAP model is improved by using data clustering in which huge data is divided into several groups (clusters) with cluster heads to achieve fast query processing in least time. In this chapter, a Dragon Fly Optimization based Clustering (DFOC) approach is proposed to enhance the efficiency of data clustering by generating optimal clusters from multidimensional clinical data for OLAP. The results are evaluated on MATLAB 2019a tool and shown the better performance of DFOC against other clustering methods ACO, GA and K-Means in terms of intra-cluster distance, purity index, F-measure, and standard deviation.

The performance of query processing over OLAP (Online Analytical Processing) model is decreased due to higher query access time for huge multidimensional data. Therefore, the clustering is introduced to improve the OLAP model efficiency by getting quick query processing because of dividing the large data into various clusters. The K-Means is a famous technique of clustering the data into groups to solve various real life issues. However, K-Means has some drawbacks like sensitivity to primary centroid assortment in cluster and local optimum convergence. Hence, a KMeans-Salp Swarm Optimization based Clustering (K-SSOC) is implemented to improve the performance of K-Means by providing optimal clustering over huge OLAP multidimensional data. The outcomes are obtained on MATLAB 2019a environment based on the parameter purity index, standard deviation, F-measure, intra-cluster distance and running time complexity over 1000 iterations. The results illustrate the superior performance of K-SSOC against K-Means, ACO and PSO over total six multidimensional datasets based on parameters.

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