



STING – Statistical Information Grid in Data Mining

[Read](#)[Courses](#)[Jobs](#)

STING is a Grid-Based Clustering Technique. In STING, the dataset is recursively divided in a hierarchical manner. After the dataset, each cell is divided into a different number of cells. And after the cell, the statistical measures of the cell are collected, which helps answer the query as quickly as possible.

Grid-Based Method in Data Mining:

In Grid-Based Methods, the space of instance is divided into a grid structure. Clustering techniques are then applied using the Cells of the grid, instead of individual data points, as the base units. The biggest advantage of this method is to improve the processing time.

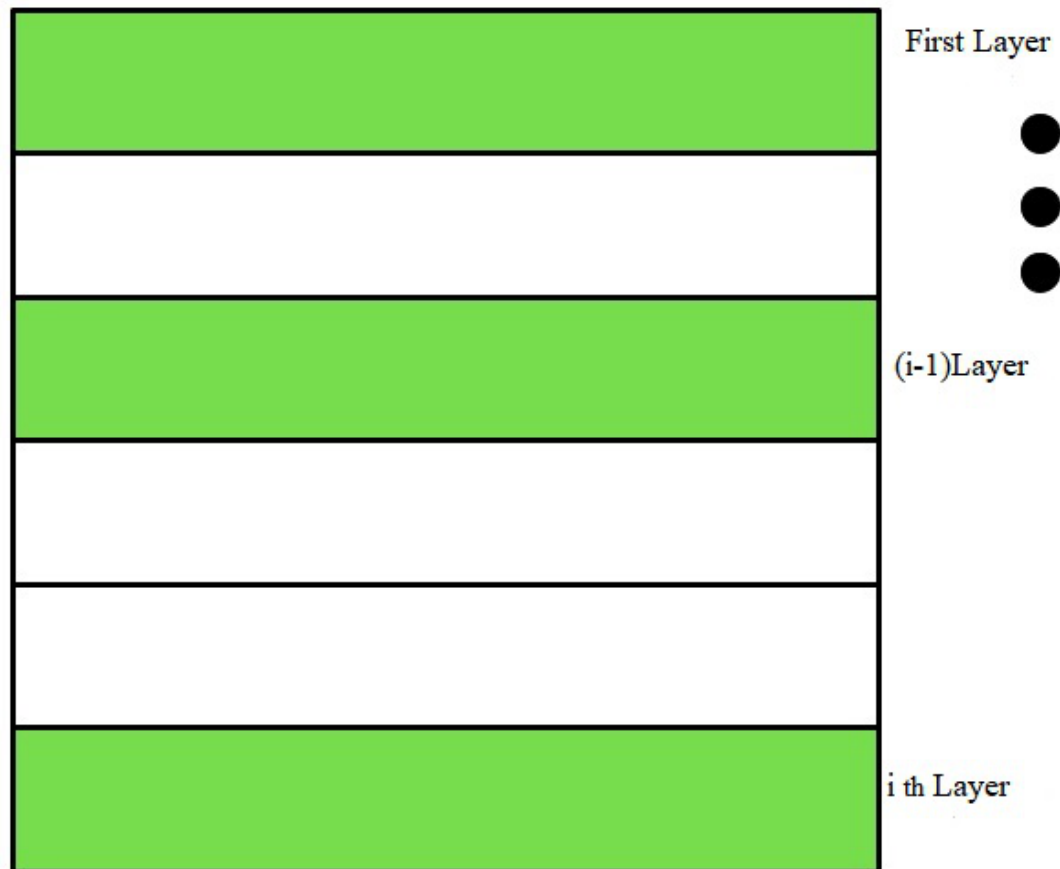
Statistical Information Grid(STING):

A STING is a grid-based clustering technique. It uses a multidimensional grid data structure that quantifies space into a finite number of cells. Instead of focusing on data points, it focuses on the value space surrounding the data points.

In STING, the spatial area is divided into rectangular cells and several levels of cells at different resolution levels. High-level cells are divided into several low-level cells.



In STING Statistical Information about attributes in each cell, such as mean, maximum, and minimum values, are precomputed and stored as statistical parameters. These statistical parameters are useful for query processing and other data analysis tasks.



The statistical parameter of higher-level cells can easily be computed from the parameters of the lower-level cells.

How STING Work:

Step 1: Determine a layer, to begin with.

Step 2: For each cell of this layer, it calculates the confidence interval or estimated range of probability that this is cell is relevant to the query.

Step 3: From the interval calculate above, it labels the cell as relevant or not relevant.

Step 4: If this layer is the bottom layer, go to point 6, otherwise, go to point 5.

Step 5: It goes down the hierarchy structure by one level. Go to point 2 for those cells that form the relevant cell of the high-level layer.

Step 7: Retrieve those data that fall into the relevant cells and do further processing. Return the result that meets the requirement of the query. Go to point 9.

Step 8: Find the regions of relevant cells. Return those regions that meet the requirement of the query. Go to point 9.

Step 9: Stop or terminate.

Advantages:

- Grid-based computing is query-independent because the statistics stored in each cell represent a summary of the data in the grid cells and are query-independent.
- The grid structure facilitates parallel processing and incremental updates.

Disadvantage:

- The main disadvantage of Sting (Statistics Grid). As we know, all cluster boundaries are either horizontal or vertical, so no diagonal boundaries are detected.

Get paid for your published articles and stand a chance to win tablet, smartwatch and exclusive GfG goodies! Submit your entries in Dev Scriptor 2024 today.

Participate in Three 90 Challenge! Enroll in any GeeksforGeeks course and get 90% refund by completing 90% course. [Explore](#) offer now.

Last Updated : 05 Apr, 2022

2

[Previous](#)

[Next](#)

[History of Data Warehousing](#)

[Backpropagation in Data Mining](#)

[Share your thoughts in the comments](#)

[Add Your Comment](#)

Statistical Methods in Data Mining

Frequent Pattern Mining in Data Mining

Mining Collective Outliers Data Mining

Generalized Sequential Pattern (GSP) Mining in Data Mining

Text Mining in Data Mining

Grid-Based Method For Distance-Based Outlier Detection in Data Mining

Different Types of Data in Data Mining

Data Cube or OLAP approach in Data Mining

Difference between Data Profiling and Data Mining

Data Mining - Time-Series, Symbolic and Biological Sequences Data



ishukatiy...

Article Tags : [Picked](#) , [Data Mining](#)

Additional Information



A-143, 9th Floor, Sovereign Corporate Tower, Sector-136, Noida, Uttar Pradesh - 201305



Company	Explore	Languages	DSA	Data Science & ML	HTML & CSS
About Us	Job-A-Thon	Python	Data Structures		HTML
Legal	Hiring Challenge	Java	Algorithms	Data Science	CSS
Careers	Hack-A-Thon	C++	DSA for	With Python	Web Templates
In Media	GfG Weekly	PHP	Beginners	Data Science For	CSS Frameworks
Contact Us	Contest	GoLang	Basic DSA	Beginner	Bootstrap
Advertise with us	Offline Classes (Delhi/NCR)	SQL	Problems	Machine Learning	Tailwind CSS
GFG Corporate Solution	DSA in JAVA/C++	R Language	DSA Roadmap	Tutorial	SASS
Placement	Master System Design	Android Tutorial	Top 100 DSA Interview	ML Maths	LESS
Training Program	GeeksforGeeks Videos	Tutorials Archive	Problems	Data	Web Design
	Geeks Community		DSA Roadmap by Sandeep Jain	Visualisation Tutorial	
			All Cheat Sheets	Pandas Tutorial	
				NumPy Tutorial	
				NLP Tutorial	
				Deep Learning Tutorial	
Python	Computer Science	DevOps	Competitive Programming	System Design	JavaScript
Python		Git			JavaScript
Programming Examples	GATE CS Notes	AWS	Top DS or Algo for CP	High Level Design	Examples
Django Tutorial	Operating Systems	Docker	Top 50 Tree	Low Level Design	TypeScript
Python Projects	Computer Network	Kubernetes	Top 50 Graph		ReactJS
Python Tkinter	Database Management System	Azure	Top 50 Array	UML Diagrams	NextJS
Web Scraping		GCP	Top 50 String	Interview Guide	AngularJS
OpenCV Python Tutorial	Software Engineering	DevOps Roadmap	Top 50 DP	Design Patterns	NodeJS
Python Interview Question	Digital Logic Design		Top 15 Websites for CP	OOAD	Lodash
	Engineering			System Design Bootcamp	Web Browser
				Interview Questions	

NCERT Solutions	School Subjects	Commerce	UPSC Study Material	SSC/ BANKING	Colleges
Class 12	Mathematics	Accountancy	Polity Notes	SSC CGL Syllabus	Indian Colleges Admission & Campus Experiences
Class 11	Physics	Business Studies	Geography Notes	SBI PO Syllabus	List of Central Universities - In India
Class 10	Chemistry	Economics	History Notes	SBI Clerk Syllabus	Colleges in Delhi University
Class 9	Biology	Management	Science and Technology Notes	IBPS PO Syllabus	IIT Colleges
Class 8	Social Science	HR Management	Economy Notes	IBPS Clerk Syllabus	NIT Colleges
Complete Study Material	English Grammar	Finance	Ethics Notes	SSC CGL Practice Papers	IIIT Colleges
		Income Tax	Previous Year Papers		

Companies	Preparation Corner	Exams	More Tutorials	Free Online Tools	Write & Earn
META Owned Companies	Company-Wise Recruitment Process	JEE Mains	Software Development	Typing Test	Write an Article
Alphabhet Owned Companies	Resume Templates	JEE Advanced	Software Testing	Image Editor	Improve an Article
TATA Group Owned Companies	Aptitude Preparation	GATE CS	Product Management	Code Formatters	Pick Topics to Write
Reliance Owned Companies	Puzzles	NEET	SAP	Code Converters	Share your Experiences
Fintech Companies	Company-Wise Preparation	UGC NET	SEO - Search Engine Optimization	Currency Converter	Internships
EdTech Companies			Linux	Random Number Generator	
			Excel	Random Password Generator	

@GeeksforGeeks, Sanchhaya Education Private Limited, All rights reserved