

Lab 1 Algorithms and Data

When we want to solve a problem, it is useful if we first look at how other people have approached that problem. For this we can use scientific databases, such as Google Scholar, SCOPUS, or Web of Science. Algorithms also process data and it would be useful if we had a set of input data on which to test different algorithms in terms of performance (running time) and accuracy of the results obtained.

Google Scholar

Google Scholar (<https://scholar.google.com/>) is a search engine for specialist (scientific) articles. In the search bar we can write keywords that can be joined by logical operators.

Example for “shortest path algorithm”

The screenshot shows the Google Scholar search results for the query "shortest path algorithm". The search bar at the top shows the query and a search button. Below the search bar, the results are displayed in a list. On the left side, there are filters for "Articole" (Articles) and "Aproximativ 2.450.000 rezultate (0,16 sec.)". The results are sorted by "Relevanță" (Relevance). The first result is "Shortest-path algorithms: A comparison" by B. Golden, published in 1976. The second result is "A bicriterion shortest path algorithm" by JCN Climaco and EQV Martins, published in 1982. The third result is "Shortest path algorithms" by G Gallo and S Pallottino, published in 1988. The fourth result is "A review and evaluations of shortest path algorithms" by K Magzhan and HM Jani, published in 2013. Each result includes a brief abstract and a link to the full text (PDF) if available. The left sidebar contains filters for "Oricând" (When), "Sortați după relevanță" (Sort by relevance), "Orice tip" (Any type), and "Creează alerta" (Create alert).

Google Academic

shortest path algorithm

Articole

Aproximativ 2.450.000 rezultate (0,16 sec.)

Oricând

Din 2023

Din 2022

Din 2019

Interval specific...

Sortați după relevanță

Sortați după dată

Orice tip

Examinați articolele

☐ includeți brevete

☒ include menționări

☒ Creează alerta

[PDF] Shortest-path algorithms: A comparison

B. Golden - Operations Research, 1976 - pubsonline.informs.org

... A sequence of distinct arcs $((11, at, - - , ap)$, where at and and are adjacent for $t = 1, - - -$, $p - 1$ is called a **path**; a route is defined as a sequence of adjacent arcs that need not be ...

☆ Salvați Citați Citat de 191 ori Articole cu conținut similar Toate cele 11 versiuni Web of Science: 81

[PDF] informs.org Full View

A bicriterion shortest path algorithm

JCN Climaco, EQV Martins - European Journal of Operational Research, 1982 - Elsevier

... The aim of this paper is to generalize the **shortest path** prob- ... used in an **algorithm** for determining the set of Pareto optimal **paths**. Our approach uses a K **shortest paths** routine to solve ...

☆ Salvați Citați Citat de 320 ori Articole cu conținut similar Toate cele 5 versiuni Web of Science: 143

Shortest path algorithms

G Gallo, S Pallottino - Annals of operations research, 1988 - Springer

... **algorithms** for the **shortest path** tree problem, some attention has also been reserved for the all pairs problem. In sect. 9, an efficient **algorithm** ... of the **shortest path** tree **algorithms** on the ...

☆ Salvați Citați Citat de 531 ori Articole cu conținut similar Toate cele 4 versiuni

[PDF] springer.com

[PDF] A review and evaluations of shortest path algorithms

K Magzhan, HM Jani - ... journal of scientific & technology research, 2013 - researchgate.net

... **path** or route from a starting point to a final destination. Generally, in order to represent the **shortest path** ... along with one that uses genetic **algorithm** are going to be discussed in this ...

☆ Salvați Citați Citat de 149 ori Articole cu conținut similar Toate cele 4 versiuni

[PDF] researchgate.net

We can see that the first article was published in 1976. From the title we can deduce that the article compares several algorithms for calculating the shortest path.

On the right side of the article we have the link to the open-access PDF version of the article (if there is an open-access version). The open-access variant exists for the first, third and fourth articles, but not for the second.

On the left side we can refine the results by choosing a specific range of publication year, type, and whether to order by date or relevance.

Example for “shortest path” and “big data” and “survey”

Google Academic

"shortest path" and "big data" and "survey"

Aproximativ 11.700 rezultate (0,11 sec.)

Articole

Oricând
Din 2023
Din 2022
Din 2019
Interval specific...

Sortați după relevanță
Sortați după dată

Orice tip
Examinați articolele

☐ includeți brevete
☒ include menționări

☒ Creează alerta

Parallel shortest path big data graph computations of US road network using apache spark: survey, architecture, and evaluation
Y Arfat, S Suma, R Mehmood, A Albeshty - Smart Infrastructure and ..., 2020 - Springer
... work on single source **shortest path** computations of **big data** road network ... **Big data** is being generated from various sources such as Internet of Things (IoT) and social media. **Big data** ...
☆ Salvați Citați Citat de 15 ori Articole cu conținut similar Toate cele 3 versiuni

A survey on dimension reduction algorithms in big data visualization [PDF] eudl.eu
Z Sun, W Xing, W Guo, S Kim, H Li, W Li, J Wu... - Cloud Computing, Smart ..., 2020 - Springer
... Second, calculating the **shortest path** between all pairs to the geodesic distance matrix on ... the **shortest path**. Finally, the distance matrix determined according to the **shortest path** is ...
☆ Salvați Citați Citat de 8 ori Articole cu conținut similar Toate cele 3 versiuni

Big data processing on volunteer computing
Z Lv, D Chen, AK Singh - ACM Transactions on Internet Technology, 2021 - dl.acm.org
... **shortest path** of the framework and shorten calculation time, an improved accurate **shortest path** ... Mengistu and Che [18] conducted a comprehensive **survey** of voluntary computing. ...
☆ Salvați Citați Citat de 10 ori Articole cu conținut similar Toate cele 5 versiuni Web of Science: 1

[HTML] **Survey on big data techniques in intelligent transportation system (ITS)** [HTML] sciencedirect.com
A Mohand, M Kubendiran - Materials Today: Proceedings, 2021 - Elsevier
... to associated places, is deposited there in **shortest path** (sPathdata) for every registry, comprised of ... pathways to the route, NG benefit Dijkstra's single-destination **shortest path** algorithm. ...
☆ Salvați Citați Citat de 13 ori Articole cu conținut similar

Notice that “and” is a logical operator which makes sure that all complex keywords will be found in the same article. You can also use “or”, “not”.

Kaggle

Kaggle (<https://www.kaggle.com/>) is a platform that hosts datasets. You can use the search bar on the top right to enter keywords. After the search, on the right side we have different filters. A useful filter for our matter is "Dataset Size" where we should choose the "large" option. Below we have a print-screen for the "stock" search and the "large" filter.

Filter by

39 Results Sort by: Relevancy

Date
☐ Last 90 days 10
☐ Last week 2

Creator
☐ You 0
☐ Others 39

Dataset Size
☐ small 1,941
☐ medium 486
☒ large 39

Dataset File Types
☐ csv 20
☐ txt 13
☐ jpg 7
[More](#)

Dataset
Stock Market India
by Harsh Kumar
2 years ago • 2 GB • 311
[Stock Market India](#)

Dataset
Stock Market Data (NASDAQ, NYSE, S&P500)
by Paul Mooney
a month ago • 1 GB • 293
[Stock Market Data \(NASDAQ, NYSE, S&P500\)](#)

Dataset
StockMarketDataFrom1996To2020
by Dip Modi
3 years ago • 2 GB • 55
[Stock market date wise data from 01/01/1996 to 06/08/2020](#)

HuggingFace

<https://huggingface.co/>

Lab/Homework exercises

1. Choose a problem you are interested in.
2. Look for a survey that cites articles that address the same issue.
3. Search for a data set that is related to the proposed problem.