MODERN SEARCH METHODS AND ALGORITHMS BEHIND THEM*

Matej Herzog

Slovenská technická univerzita v Bratislave
Fakulta informatiky a informačných technológií
xherzog@stuba.sk
00000000

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For: Professor Y.R.U StillHere

Abstrakt

In my article, I want to concentrate on the analysis and comparison of the methods modern-day search engines use to find the correct answers to queries or to address the most relevant web page or article related to the search topic, as well as bring a short insight to the history and needs for better information extraction. I also want to devote a part of my work to an insight into the algorithms used in the process and evaluate why some methods are better for a specific problem and some not. My work should explain to the reader how net or online library search works and how the software engineers design the algorithms to get the desired outcome. ...

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1 Introduction

Brief overview of the importance of search engines in our daily lives. The growth of the internet and the need for effective search methods. Purpose and structure of the article.

Motivujte čitateľa a vysvetlite, o čom píšete. Úvod sa väčšinou nedelí na časti.

Uveďte explicitne štruktúru článku. Tu je nejaký príklad. Základný problém, ktorý bol naznačený v úvode, je podrobnejšie vysvetlený v časti 3. Dôležité súvislosti sú uvedené v častiach 5 a 6. Záverečné poznámky prináša časť ??.

2 History of Search Engines

Early search engines and their limitations. Milestones in search engine development (e.g., Google's PageRank algorithm). The evolution from simple keyword-based to more complex algorithms.

3 Information Retrieval and Extraction

Explanation of the information retrieval process. The role of Natural Language Processing (NLP) in modern search. Challenges in understanding user queries and web content.

Z obr. 1 je všetko jasné.

4 Modern Search Methods

Keyword-based search vs. semantic search. Machine learning and AI in search engines. Personalization and recommendation systems. Voice and visual search.

Aj text môže byť prezentovaný ako obrázok. Stane sa z neho označný plávajúci objekt. Po vytvorení diagramu zrušte znak % pred príkazom `\includegraphics` označte tento riadok ako komentár (tiež pomocou znaku %).

Obr. 1: Rozhodujúci argument.

Základným problémom je teda... Najprv sa pozrieme na nejaké vysvetlenie (časť 4.1), a potom na ešte nejaké (časť 4.1).[1]

Môže sa zdať, že problém vlastne nejestvuje [1], ale bolo dokázané, že to tak nie je [2,3]. Napriek tomu, aj dnes na webe narazíme na všelijaké pochybné názory [4]. Dôležité veci možno *zdôrazniť kurzívou*.

4.1 Nejaké vysvetlenie

Niekedy treba uviesť zoznam:

- jedna vec
- druhá vec
  - xhttps://www.overleaf.com/project/65116e2716ece438b009aae3
  - y

Ten istý zoznam, len číslovaný:

1. jedna vec
2. druhá vec
   (a) x
   (b) y

4.2 Ešte nejaké vysvetlenie

Veľmi dôležitá poznámka. Niekedy je potrebné nadpisom označiť odsek. Text pokračuje hneď za nadpisom.

5 Algorithms in Search Engines

An overview of the key algorithms used, such as PageRank, TF-IDF, and more. Deep dive into the workings of these algorithms and their strengths and weaknesses. How search engines use these algorithms to rank web pages and content.

[1] Niekedy môžete potrebovať aj poznámku pod čiarou.

6 Relevance and Ranking

Factors that determine the relevance of search results. User behavior analysis and click-through rates. The role of user feedback in improving search algorithms.

7 Challenges and Future Trends

Discuss search engines' challenges (e.g., fake news detection, privacy concerns). Upcoming search technology trends include voice and visual search, quantum computing, and AI advancements.

8 Designing Search Algorithms

Explanation of the process of designing search algorithms. Role of data collection and quality in training search models. The iterative process of refining algorithms based on user feedback.

9 Conclusion

Summarize the key points discussed in the article. Emphasize the importance of ongoing research and development in search technology. Highlight the impact of search engines on information access and the internet.

Literatúra

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[4] C. M. U. Software Engineering Institute. A framework for software product line practice—version 5.0. `http://www.sei.cmu.edu/productlines/frame_report/`.