

Web資料單一化包裝器之研究

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摘要

網際網路(Internet)可視為一個龐大的資料庫，儲存於其上的資料格式也不盡相同，且資料量每天以難以想像的速度在成長，更新速度也非常快。為了查詢以及擷取從網際網路獲得的大量資訊來源，目前一般都是每個網頁都有專屬的包裝器(wrapper)，而每個包裝器只適用於查詢以及擷取其所屬的網頁。當網頁資料改變或更新時，其包裝器便不再適用於擷取其所屬的網頁。為了解決這樣的問題，在本研究中我們設計了一個Web資料單一化包裝器(或generalized wrapper)，使用者輸入查詢指令給包裝器，Web資料單一化包裝器根據網頁所提供的規則(production)對網頁進行解析，進而從網頁擷取出查詢的資訊，最後將擷取出來的資訊封裝成可擴展標示語言(XML)格式。而當網頁資料改變時，使用者只需要更新規則(production)就可以，不需要再重新建立新的包裝器。 關鍵詞：半結構性資料、包裝器、規則、可擴展的標示語言。

關鍵詞：半結構性資料；包裝器；規則；可擴展的標示語言

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參考文獻

1. S. Abiteboul, "Semi-structured data: from practice to theory," 16th Annual IEEE Symposium on Logic in Computer Science, pp. 379-386, 2001.
2. Dan Suciu, "Semi-structured Data and XML," In Proceedings of International Conference on Foundations of Data Organization, 1998.
3. S. Abiteboul, D. Quass, J. McHugh, J. Widom, and J.L. Wiener, "The Lorel Query Language for Semi-structured Data," International Journal on Digital Libraries, 1(1), pp. 68-88, 1997.
4. J.Hammer, H.Garcia-Molina, J.Cho, R.Aranha, A.respo, "Extracting Semi-structured Information from the Web," In Proceedings of the Workshop on Management of Semi-structured Data held in conjunction with ACM SIGMOD'97, pp. 18-25, 1997.
5. L. Liu, W. Han, D. Buttler, C. Pu, and W. Tang, "An XML-based Wrapper Generation Toolkit for Internet Information Sources," In Proceedings of the 1999 ACM SIGMOD International Conference on Management of Data (SIGMOD'99) (short paper and software demo), pp 540 - 543, 1999.
6. Naveen Ashish and Craig A. Knoblock, "Semi-automatic wrapper generation for Internet information sources," In Proceedings of the Second IFCIS International Conference on Cooperative Information Systems, pp. 160-169, 1997.
7. Xiaoying Gao and Leon Sterling, "Autowrapper: automatic wrapper generation for multiple online services," In Proceedings of Asia Pacific Web Conference 1999 (APWeb99), World Wide Web-Technologies and Applications for the New Millennium, pp. 229-238, 1999.
8. Alberto Mendelzon, George Mihaila, Tova Milo, "Querying the World Wide Web," In Proc. PDIS'96 (Full version in Int'l Journal on Digital Libraries 1,1997), pp. 54-67,1996.
9. Sergey Brin, "Extracting Patterns and Relations from the World Wide Web," WebDB Workshop at EDBT'98, 6th International Conference on Extending Database Technology, pp. 172-183,1998.
10. Smith, T. F., and Waterman, M. S, "Identification of Common Molecular Subsequences," Journal of Molecular Biology, vol. 147, pp. 195-197, 1981.
11. Boris Chidlovskii, Jon Ragetli, Maarten de Rijke, "Automatic Wrapper Generation for Web Search Engines," Web-Age Information Management, First International Conference, WAIM,

pp. 399-410, 2000. 12. Montebello, "Wrapping WWW information sources," Database Engineering and Applications Symposium, 2000 International, pp. 431—436, 2000. 13. Y. Papakonstantinou, S. Abiteboul, and H. Garcia-Molina, "Object Fusion in Mediator Systems," In Proceedings of Twentieth International Conference on Very Large Databases, Bombay, India, pp. 413-424, 1996. 14. G. Wiederhold, "Mediators in the architecture of future information systems," IEEE Computer, pp. 38-49, 1992. 15. S. Abiteboul, "Querying semi-structured data," In ICDT, pp. 1-18, 1997. 16. K. Shoens, A. Luniewski, P. Schwarz, J. Stamos, and J. Thomas, "The RUFUS System: Information Organization for Semi-Structured Data," In Proceedings of Nineteenth International Conference on Very Large Databases, Dublin, Ireland, pp. 97-107, 1993.