

週期性覆背式有限寬度共面波導之傳播特性

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摘要

由於今時今日的網路技術進步快速，所以在分散式環境下的異質性多資料庫系統也愈來愈複雜；因此，就有許多研究希望能有效的整合這些異質性資料庫而可被資料倉儲系統所使用。現今的資訊技術，是使用整合資料庫綱目的方式來解決此問題，而整合資料庫綱目的方式主要分成下列兩方面來進行整合：一、視界(View)的整合：此乃於其多資料庫系統上建立一全域性(global)及單一性(unified)的視界架構，以統合不同資料庫間彼此的溝通，使得各資料庫間的資料得以分享。二、資料庫的整合：由於有了一個全域性的視界，藉由此一視界可以把不同的資料庫系統聯結在一起，使得資訊可以互相的溝通。但這二種技術，目前均仰賴設計師來做定義，以產生完全整合的效果，因而整合是片段的，而不是全面的整合，所以對於整個資料倉儲系統並無法提供豐富的語意使其有效的發揮其功效。藉由資料庫綱目的整合(schema integration)可以有效的達到全面資料的整合，因此便不會有單一查詢對不同資料庫系統而言，產生不同的結果；或是相同的結果不同的語意。此一技術不僅能整合同一資料模式的資料庫系統，對於不同資料模式的資料庫系統亦能整合。但目前此一技術仍均仰賴設計師來做分析，以便將異質性的資料庫完整的整合，而這整合的過程中，最複雜的部分即是對各資料庫間語意衝突的發掘與解決，如無法提出有效的解決方法，則此一技術所產生的全域性資料庫的品質將無法提昇，而資料完整性與一致性也將受到考驗。資料庫整合的技術是一個複雜且困難的工作，其原因在於對於相同的資料，在資料庫系中可以有多種不同的表示法，故各個資料模組之間的關係經常都是模糊不清的；而為了要整合出一個全域性的一個資料庫系統，我們便要去將各個模糊不清的關係逐一的去釐清。為了要去分析各個資料庫之間的各種關係，所以本研究的核心部分即變成要去探討各個資料庫之間的語意是否有衝突性。我們將資料庫整合主要分成兩大部分：第一部分主要在探討與解決資料庫語意上的各種衝突，我們將利用Data Mining的技術找出二資料庫間語意衝突的地方，衝突的解決是為了要把各個資料庫一致化，也只有將資料庫一致化之後我們才能進行合併的程序；在第二部分即是要將已致化的資料庫進行合併，當然在合併之前，我們也要對各個資料庫之間的所隱藏的語意加以發掘，以期在最後所建立的全域性資料庫能夠具備最多的語意。

關鍵詞：資料倉儲；資料庫綱目；資料庫綱目整合

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參考文獻

- [1] Berson, A., and Smith, S. J., " Data Warehousing, Data Mining, and OLAP, " McGraw-Hill, pp. 14-21, 1997.
- [2] S. B. Navathe and S. G. Gadgil, " A methodology for view integration in logical data base design, " in Proc. 8th Int. Conf. Very Large Data Bases, Mexico City, Sept. 1982 pp. 142-152.
- [3] C. Batini, M. Lenzerini, and S. B. Navathe, " A Comparative Analysis of Methodologies for Database Schema Integration " , ACM Computing Surveys, VOL. 18, NO. 4, pp.323-364, Dec. 1986.
- [4] Tse-Min Hung, " A Novel Data Warehouse Architecture: A Database Proxy Server Approach, " Master Thesis, Department of Computer Science and Engineering, Tatung Institute of Technology, June 1999.
- [5] Philippe-Pierre Dornier, Ricardo Ernst, Michel fender, and Panos Kouvelis, " Global Operations and Logistics, " John Wiley & Sons, Inc., ISBN0-471-12036-7, pp. 1-5, 1998.
- [6] C.Palvia Prashant, " Research Issues in Global Information Technology Management, " Information Resource Management Journal, Vol. 11, No. 2, 1998.
- [7] Larson, J. A, Navathe, S. B., and Elmasri, R., " A Theory of Attribute Equivalence in Databases with Application to Schema Integration, " IEEE Transaction on Software Engineering, VOL. 15, NO. 4, pp. 449-463, Apr. 1989.
- [8] Gengo Suzuki, Masashi Yamamuro, " Schema Integration Methodology Including Structural Conflict Resolution and Checking Conceptual Similarity, " Database Reengineering and Interoperability, Plenum Press, New York, pp. 247-260, 1996.
- [9] SHOVAL, P. and ZOHAN, A., " Binary-relationship integration methodology " , Data & Knowledge Engineering, VOL. 6, pp.225- 250, 1996.
- [10] Ernst, R., Fender, M. and Kouvelis, P., " Global Operations and Logistics Text and Cases, " John Wiley & Sons, pp. 1-5, INC. 1998.
- [11] Stefano Saccapietra, Christine Parent, and Yann Dupont, " Model Independent Assertions for Integration of Heterogeneous Schemas " , The VLDB Journal, Vol. 1, No 1, pp. 81-126, July 1992.
- [12] Omran A. Bukhres and Ahmed K. Elmagarmid, " Object- Oriented Multidatabase Systems A Solution for Advanced Applications, " Prentice Hall, pp. 105-202, 1996.
- [13] Giuseppe Santucci, " Semantic schema refinements for multilevel schema integration, " Data & Knowledge Engineering 25, pp. 301-326, 1998.
- [14] Li S. H., Huang S. M., and Chen H. H., " Discover Missing Semantic from Existing Relational Databases, " 8th International Database Workshop, Hong Kong, pp. 275-286, 1997.
- [15] Shing-Han Li, " Translating A Relational Database Schema into An Extended Entity-Relationship Database Schema: A Data Mining and Data Dictionary Approach, " Master Thesis, Department of Computer Science and Engineering, Tatung Institute of Technology, Jun. 1997.
- [16] Joseph Fong and Shi-Ming Huang, " Architecture of a Universal Database: A Frame Model Approach, " The International Journal of Cooperative Information System, World Scientific Pub., Jun. 1999.
- [17] Joseph Fong and Shi-Ming Huang, " Information Systems Reengineering, " Springer-Verlag Singapore Pte. Ltd., 1997.