Table 1 Overview of the DOLAP research topics

|  |  |  |  |
| --- | --- | --- | --- |
| **Topic Label & Top Terms** | **Topic Label & Top Terms** | **Topic Label & Top Terms** | **Topic Label & Top Terms** |
| **Topic 0**: Data mining topics | **Topic 1**: System requirements, business models and process | **Topic 2**: Metadata management, workload, and quality | **Topic 3**: Sparse data, algorithms and computational processes |
| **Topic 4**: Algebra and aggregation | **Topic 5**: Query optimization and performance | **Topic 6**: Multidimensional data analysis with data cube and OLAP | **Topic 7**: Multidimensional data modeling and design |
| **Topic 8**: Indexing, physical data representation, and compression | **Topic 9**: Machine learning topics | **Topic 10**: Materialized Views: Query processing and maintenance | **Topic 11**: Big data analytics and processing, optimization of large datasets |
| **Topic 12**: Security, privacy, and encryption | **Topic 13**: DW Schema design, integration, and ontology | **Topic 14**: Spatial data analysis and GIS | **Topic 15**: Documents and XML data management |
| **Topic 16**: DW versioning and schema evolution | **Topic 17**: Application-specific representation and analysis | **Topic 18**: Text data processing, similarity, evaluation & interpretation | **Topic 19**: ETL processes and tools |

**Table 2** Top 10 influential DOLAP papers

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Title** | **Authors** | **Year** | **Citation Counts** | | |
| **Scopus** | **Google**  **Scholar** | **ACM** |
| *Conceptual modeling for ETL processes* | Vassiliadis P.; Simitsis A.; Skiadopoulos S. | 2002 | 281 | 682 | 223 |
| *Analytics over large-scale multidimensional data: The big data revolution!* | Cuzzocrea A.; Song I.-Y.; Davis K.C. | 2011 | 258 | 490 | 204 |
| *Beyond data warehousing: What's next in business intelligence?* | Golfarelli M.; Rizzi S.; Cella I. | 2004 | 207 | 574 | 133 |
| *starER: A conceptual model for data warehouse design* | Tryfona N.; Busborg F.; Christiansen J.G.B. | 1999 | 181 | 392 | 112 |
| *Goal-oriented requirement analysis for data warehouse design* | Giorgini P.; Rizzi S.; Garzetti M. | 2005 | 159 | 287 | 124 |
| *Research in data warehouse modeling and design: Dead or alive?* | Rizzi S.; Abelló A.; Lechtenbörger J.; Trujillo J. | 2006 | 153 | 324 | 125 |
| *A methodological framework for data warehouse design* | Golfarelli M.; Rizzi S. | 1998 | 145 | 354 | 111 |
| *Data Warehousing and OLAP over Big Data: Current challenges and future research directions* | Cuzzocrea A.; Bellatreche L.; Song I.-Y. | 2013 | 112 | 181 | 82 |
| *Data warehouse design from XML sources* | Golfarelli M.; Rizzi S.; Vrdoljak B. | 2001 | 91 | 177 | 68 |
| *Designing ETL processes using semantic web technologies* | Skoutas D.; Simitsis A. | 2006 | 83 | 141 | 67 |

**Table 3** The top 10 productive DOLAP researchers

|  |  |  |  |
| --- | --- | --- | --- |
| **Scopus IDs** | **Name** | **Affiliation** | **DOLAP Papers** |
| 7005314544 | Rizzi, Stefano | University of Bologna, Italy | 23 |
| 55925957700 | Marcel, Patrick | Université F. Rabelais 3, France | 19 |
| 15073664800 | Abelló, Alberto | U. Politecnica de Catalunya, Spain | 17 |
| 7202189773 | Pedersen, Torben Bach | Aalborg University, Denmark | 16 |
| 8892805000 | Vassiliadis, Panos | National Technical Univ. of Athens, Greece | 15 |
| 6602888121 | Golfarelli, Matteo | University of Bologna, Italy | 14 |
| 57203051107 | Ordonez, Carlos | University of Houston, United States | 14 |
| 7103051196 | Trujillo, Juan | Universidad de Alicante, Spain | 12 |
| 15073752300 | Bellatreche, Ladjel | LISI ENSMA Téléport, France | 10 |
| 8941541300 | Song, Il-Yeol | Drexel University, United States | 10 |

**Table 4** Top 10 most cited publications in DOLAP papers

|  |  |  |
| --- | --- | --- |
| **Rank** | **Journal/Conference** | **Cited Frequency** |
| 1 | The ACM Conference on Special Interest Group on Management of Data (SIGMOD) | 126 |
| 2 | Proceedings of the VLDB Endowment (PVLDB) | 97 |
| 3 | International Conference on Very Large Data Bases (VLDB) | 84 |
| 4 | IEEE International Conference on Data Engineering (ICDE) | 57 |
| 5 | A quarterly publication of the Special Interest Group on Management of Data (SIGMOD) of the Association for Computing Machinery (SIGMOD Record) | 54 |
| 6 | International Conference on Data Warehousing and OLAP (DOLAP) | 47 |
| 7 | Information Systems Journal | 44 |
| 8 | International Conference on Extending Database Technology (EDBT) | 42 |
| 9 | IEEE Transactions on Knowledge and Data Engineering Journal | 41 |
| 10 | DAWAK | 38 |

**Table 5** Top 10 influence authors of the DOLAP workshops

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Author** | **Degree** | **Betweenness Centralization** |
| 1 | Rizzi, Stefano | 39 | 0.05604 |
| 2 | Marcel, Patrick | 37 | 0.04206 |
| 3 | Pedersen, Torben Bach | 25 | 0.02842 |
| 4 | Abelló, Alberto | 24 | 0.04067 |
| 5 | Vassiliadis, Panos | 24 | 0.03298 |
| 6 | Peralta, Verónika | 22 | 0.00650 |
| 7 | Bellatreche, Ladjel | 22 | 0.02868 |
| 8 | Trujillo, Juan | 18 | 0.03238 |
| 9 | Labroche, Nicolas | 18 | 0.00605 |
| 10 | Song, Il-Yeol | 17 | 0.02642 |