Report on The Seattle Report on Database Research

This paper discusses about Seattle report on big data which was listed as their field's primary challenge in the most recent assessment. But in the last five years, the shift has progressed far more quickly than we anticipated, in part because of advances in artificial intelligence (AI) and machine learning (ML) (AI). Given its proficiency in data discovery, versioning, cleansing, and integration, the database community has a lot to offer ML users. These tools are essential for machine learning to extract valuable information from data. Investigating how SQL querying functionality is smoothly linked with machine learning has become essential given that most enterprise's important data assets are controlled by database systems. The community is also quite interested in using ML to enhance the database platform itself. It has become much more common to use managed cloud data systems as opposed to just employing virtual computers there. To evaluate data stored in cloud storage, the industry has settled on a data lake design, which leverages on-demand elastic compute services. With the help of this design, computing and storage may scale separately. These modifications will significantly affect how we construct data systems in the future. Furthermore, this paper discusses major research challenges which are organized under 4 subsections:

1. Data science
2. Data governance
3. Cloud services
4. Database engines

The main suggestions and observations from that conference are condensed in this report. As database community continuously giving its strong impact in the history of research and industry areas. It needs to concentrate on developing open-source software systems and cloud-based services for further research purposes.

Report on “One Size Fits All”: An Idea Whose Time Has Come and Gone

This paper discusses about the traditional DBMS has attempted to be "one size fits all," but this endeavour has failed in the face of data warehouse systems and streaming systems, and it will continue to fail miserably in the future as more and more diversified needs for data storage emerge. This paper further states in the data warehouse example that most businesses have two storage systems: one that holds OLTP data and another that just scrapes data from this OLTP system to enable business intelligence queries on it. Yet various optimization methods, such as bitmap index and materialized view, are needed for the two storage systems. Using a common front-end to cover two underlying bottoms, one for OLTP and one for data warehousing, is a frequent approach in vendor products, however this structure makes selling these systems perplexing. The author contends that standard OLTP systems cannot handle the "firehose" of data produced by sensor networks in the case of stream processing. Moreover, the standard OLTP systems' slow pace makes them unsuitable for real-time events queries. This paper draws the conclusion that there will be a wide variety of domain-specific databases released in the future and that database systems are entering an intriguing phase through the examination of various domains, including sensor networks, scientific databases, and text search. Furthermore, a sizable number of domain-specific database engines with various features may exist in the future. We think that an exciting time is coming for the DBMS market. Data management and processing ideas and methods can be applied to a wide range of both established and emergent applications. There doesn't seem to be a clear way to handle these apps with a single code line because they are so different from commercial data processing and from one another. Under these conditions, the "one size fits all" idea is unlikely to endure.

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