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Query Processing on Spatial Data with Heterogeneous Attributes

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Abstract:

Considerable portions of real-life spatial data are associated with not only spatial attributes, i.e. locations, but also non-spatial attributes that often imply the quality of the objects the data represents. For example, hotels have both locations and quality attributes like price, star, etc. Traditional spatial databases, however, have been focused on the spatial attributes only and ignore the informative non-spatial attributes. Consequently, existing spatial database technologies fall short when heterogeneous attributes are involved in complex spatial data applications. On the other hand, multiple quality attributes are usually compared according to the dominance relationship. By integrating traditional spatial constraints with dominance relationship, we define novel query types that capture practical user needs involving heterogeneous attributes of large spatial data sets. In this talk I will introduce two such query types. Efficient query processing methods, including relevant indexes and algorithms, will be discussed, followed by analytical and experimental evaluations. Finally, I will present some personal thoughts on the future possibilities and challenges in this direction.

Host: Yongluan Zhou