A State-of-Art in R-Tree Variants for Spatial Indexing

Abstract

Nowadays, indexing has become essential for fast retrieval of results. Spatial databases are used in many applications which demand faster retrieval of data. These data are multi-dimensional. Designing index structure for spatial databases is current area of research. R-Tree is the most widely used index structure for multi-dimensional data. Many variants of R-Tree has evolved with each performing better in some aspect like query retrieval, insertion cost, application specific and so on. In this work, state-of-art of variants in R-Tree is presented. This paper provides an idea of the present development in spatial indexing and paves way for the researchers to explore and analyze the difficulties and trade-offs in the work. The R-Tree variants are classified according to the way they are different from the original R-Tree either in the process of construction or whether it is a hybrid of R-Tree and some other structure or whether it is an extension of R-Tree to support many other applications.

References

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