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Algorithms used in Spatial Data Mining GIS

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Abstract : Extracting knowledge from spatial data like GIS data is important to reduce the data and extract information. Therefore, the development of new techniques and tools that support the human in transforming data into useful knowledge has been the focus of the relatively new and interdisciplinary research area 'knowledge discovery in databases'. Thus, we introduce a set of database primitives or basic operations for spatial data mining which are sufficient to express most of the spatial data mining algorithms from the literature. This approach has several advantages. Similar to the relational standard language SQL, the use of standard primitives will speed-up the development of new data mining algorithms and will also make them more portable. We introduced a database-oriented framework for spatial data mining which is based on the concepts of neighborhood graphs and paths. A small set of basic operations on these graphs and paths were defined as database primitives for spatial data mining. Furthermore, techniques to efficiently support the database primitives by a commercial DBMS were presented.

Keywords : spatial data base, knowledge discovery database, data mining, spatial relationship, predictive data mining
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