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Data Bases for Graphics Processing

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The thesis contains a “bottom-up” presentation of the field of data bases for graphics processing starting with the physical level organization of the graphic data, continuing with the description of the logical structure of graphic information (especially of geometric nature - points, curves, volumes or image space information). The way of structuring the graphic information is described at the level of the user interface of the DBMS and at the level of the data models that realize the graphic data elements abstraction. There are described various classes of data definition and data manipulation languages that characterize the data base management systems for graphics processing. Among the variety of application in this field I described some scientific visualization applications, a C.A.D. system that I have developed in a research team at the Research Institute for Computers (I.T.C.) Bucharest and implementations and evaluations of some spatial indexing methods.

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