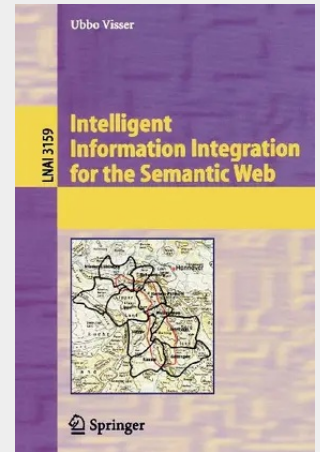


Intelligent Information Integration for the Semantic Web

The Semantic Web offers new options for information processes. Dr. Visser is dealing with two core issues in this area: the integration of data on the semantic level and the problem of spatio-temporal representation and reasoning. He tackles existing research problems within the field of geographic information systems (GIS), the solution of which are essential for an improved functionality of applications that make use of the Semantic Web (e.g., for heterogeneous digital maps). In addition, they are of fundamental significance for information sciences as such. In an introductory overview of this field of research, he motivates the necessity for formal metadata for unstructured information in the World Wide Web. Without metadata, an efficient search on a semantic level will turn out to be impossible, above all if it is not only applied to a terminological level but also to spatial-temporal knowledge. In this context, the task of information integration is divided into syntactic, structural, and semantic integration, the last class by far the most difficult, above all with respect to contextual semantic heterogeneities. A current overview of the state of the art in the field of information integration follows. Emphasis is put particularly on the representation of spatial and temporal aspects including the corresponding inference mechanisms, and also the special requirements on the Open GIS Consortium.

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