

## Book review

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**Tolerantes Information Retrieval: neuronale Netze zur Erhoehung der Adaptivitaet und Flexibilitaet bei der Informationssuche**, Thomas Mandl, Schriften zur Informationswissenschaft Bd. 39 (2001), Publisher: Konstanz: UVK-Verlagsgesellschaft, Germany

Thomas Mandl's dissertation "Tolerantes Information Retrieval: neuronale Netze zur Erhoehung der Adaptivitaet und Flexibilitaet bei der Informationssuche" (Tolerant Information Retrieval: neural networks to increase adaptation and flexibility when searching for information) deals with human-machine interaction in the information retrieval process. The research is centred around empirical research into learning systems during retrieval processes and takes into account the results of the research project ELVIRA<sup>1</sup> funded by the German Federal Ministry for Industry and Economic Development (Bundesministerium fuer Wirtschaft) from 1995–1998. The software used is Latent Semantic Indexing (LSI) by Telcordia (was Bellcore).

The book first describes the state of the art in neural networks in information retrieval by analysing, clustering and evaluating a large number of information retrieval systems. Neural networks are a method of processing vague information and of implementing cognitive skills when dealing with vague user behaviour. The shortcomings of existing information retrieval models have led to the development of the COSIMIR model, which is based on the neural back-propagation algorithm and learns by comparing queries and documents (a central element in all information retrieval (IR) processes). First, COSIMIR uses a cognitive approach, which replaces the formal IR model and leads to higher adaptation and tolerance with regard to user interests and, second, the transformation network allows the retrieval of heterogeneously represented data. Tests have shown that the COSIMIR model achieves good results with factual data; better than with other data sets. Retrieval results vary per data set and search methodology, but while all IR systems tend to find the same number of relevant documents, each IR system will also retrieve other relevant documents. It is therefore recommended to combine a variety of IR systems via a fusion methodology, which leads to a form of federated searching.

An electronic version of this book is available at:

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<sup>1</sup>Elektronisches Verbandsinformations-, Retrieval- und Analysesystem (electronic information-, retrieval and analysis system for industry associations).