Nökel, Klaus

Temporally distributed symptoms in technical diagnosis. (English) Zbl 0786.68088

Lecture Notes in Computer Science 517. Lecture Notes in Artificial Intelligence, Berlin etc.: Springer-Verlag. IX, 164 p. (1991).

The book is based on the author's doctoral dissertation and addresses the problem of treating time-dependent symptoms for diagnosis. Starting with a classification of the various types of dynamic faulty behavior the author identifies one class, called temporally distributed symptoms [TDSs], and gives a declarative representation language for its specification. The problem of matching a measurement sequence against a TDS specification is then considered, and an algorithm for solving that problem is described.

The book includes five chapters. Chapter 1 is an introduction. Chapter 2 surveys the representation of time-dependent information and temporal reasoning in artificial intelligence in general. Chapter 3 contains most of the technical results, including the description of a temporal matching algorithm. Chapter 4 describes how temporal matching can be used as a basic technique in diagnostic expert systems, and how it can be integrated into either associative or model-based diagnosis system.

Reviewer: Y.M.El-Fattah (Wien)

MSC:

68T35	Theory of languages and software systems (knowledge-based systems, expert systems, etc.) for artificial intelligence
68-02	Research exposition (monographs, survey articles) pertaining to computer science
68U99	Computing methodologies and applications

Keywords:

temporally distributed symptoms; temporal reasoning; temporal matching; diagnostic expert systems; model-based diagnosis

Full Text: DOI